August, 1956

SOAP *and* Chemical Specialties

In this issue...

ighteners' 1956 volume
detergents: $6 million

* * *

eavy duty brake fluids--
nod in new state laws

* * *

ect resistance growth
entomologists worried

* * *

rosol perfuming tricky,
so test well before use

First new product of Bon Ami in 11 years is aerosol cleaning compound, "Jet-Spray". Using new propellant, product is loaded in Continental can by Continental Filling. Specially designed valve by Risdan. "Jet-Spray" developed by Dr. D. H. Terry, Bon Ami's director of research.

UNIQUE FREE-FLOWING NON-CAKING FORM

HIGH SOLUBILITY— QUICK DISSOLVING

SPARKLING APPEARANCE

BULKING TO REDUCE COST

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BUFFERING—ACID NEUTRALIZING

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DL-8

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People seem particularly selective in choosing and using protective preparations to guard them against sunburn and keep their sun tan. The popular favorites —the classics—not only work well, but smell good. The odor appeals when they are applied, and adds much to the lasting pleasure their smart use gives.

You can't make such classics with common scents. Common scents would quickly give offense. Nothing is safer under the sun than the subtlety of good scents, from Norda.

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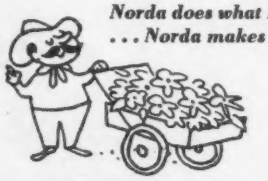
Use Norda good scents, for good business. Send your letterhead for free samples today.



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Are you searching for an honest appraisal **to guide you as a private brand distributor**

Beauty and Durability

Anti-Slip

Water Resistance

Solid Content

Carnauba Wax

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Each of Candy's floor waxes are all-around top quality for certain traffic conditions. They impart the finest protection and beauty to floors for which best suited.

CANDY'S SUPREME (standard)
BRIGHT BEAUTY® (standard)
CANDY'S SUPREME Special WR
SUPER CAND-DOX®
CAND-DOX® #CS
CAND-DOX® #BB

All Candy's products are available for private brand resale and are sold only through distributors except for experimental accounts in Chicago essential to research.

Initial appearance is important, but for a waxed surface to remain beautiful, it must be durable. Durability depends not only on resistance to abrasion of traffic, but even more so on resistance to discoloring marks. Durability should be measured by how long the waxed surface maintains a nice appearance before complete removal and re-waxing is required.

Anti-slip, or reasonable safety underfoot, does not mean that the qualities of beauty and protection need be sacrificed. The proper balance—a wax film which is not excessively slippery, yet which is not tacky and does not collect dirt readily—gives the performance that answers the foremost original reason for use of a floor wax... beauty and protection.

Frequent damp mopping or wet traffic can make water resistance very important. Overdoing this quality when no problem exists out of the ordinary, simply increases the difficulty of complete removal or applying multiple coats. Removability must be considered as important as water-resistance under most normal conditions.

The percentage of solid content is not nearly as important as the **quality** of the solids. Good quality indicates 12% of solids as the answer for most well planned maintenance programs. Two applications of 12% gives better results than one of 18%. "Washed out" floors and other special problems maintain better when more concentrated waxes are used. Over-waxing and resultant greater difficulty in removal for periodic maintenance may do more harm than good.

The most important features of a good wax ...all-around quality of performance...are built around Carnauba Wax. When refined and compounded with other additives and scientifically controlled in manufacture, Carnauba alone imparts the beauty and protection that makes the use of floor waxes both profitable and possible. Make-shift manufacture or over-emphasis on any one given quality most certainly will lead to unsatisfactory performance.

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Bright Beauty WAX REMOVER & all-purpose SURFACE CLEANER
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Bright Beauty PASTE WAX
Properly blended and refined from excellent quality solids and solvents that produce the best drying time and evaporation. Easy to handle, having "creamy" consistency and stability that lasts throughout storage and usage life.

Bright Beauty LIQUID (spirit) PREPARED WAXES
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Now you can have dramatic, colorful labeling of your private brand name on all 55, 35, 30, 20 & 15 gal. drums and 5 gal. pails. This added service is accomplished right in our plant...your inspection invited...or write for details.

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Candy & Company, Inc.

2515 W. 35th ST., CHICAGO

SOAP and Chemical Specialties

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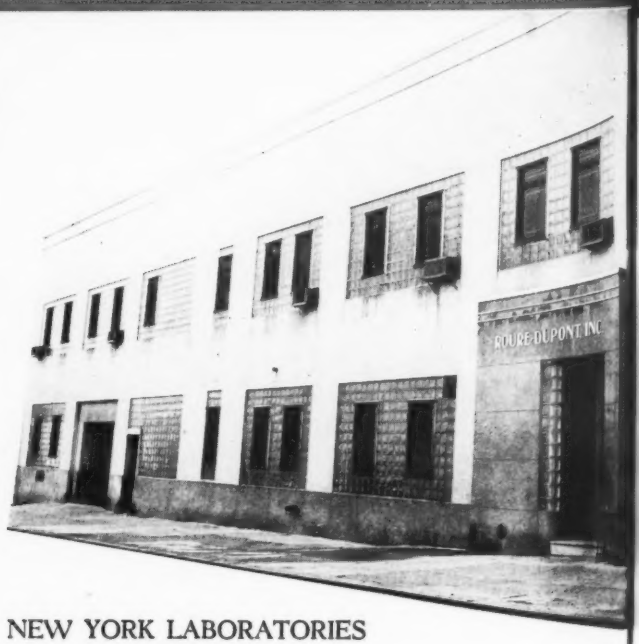
ROURE



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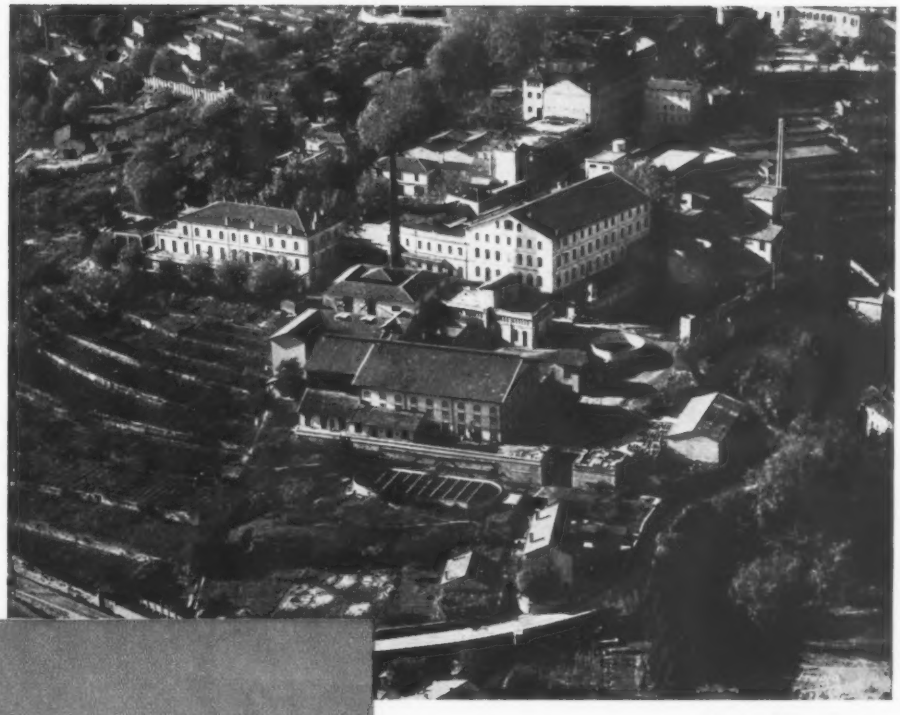
1820



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DUPONT

Roure-Bertrand Fils, Grasse, and Justin Dupont, Argenteuil, France, as well as their facilities in North Africa, India, the Far East and South America, have for decades been prime processors of basic ingredients for the perfumers of the world.

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Roure-Dupont, Inc. technical staff is in a position to put its vast international facilities and know-how at your disposal.

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Tetrasodium Pyrophosphate
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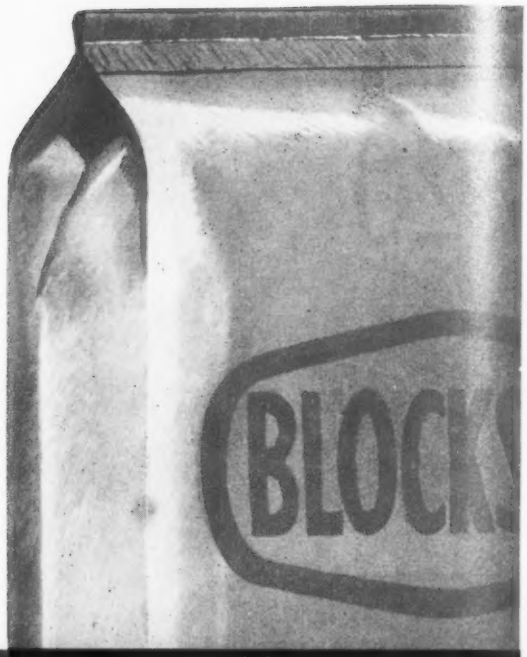
(SODIUM HEXAMETAPHOSPHATE)
(SODIUM TETRAPHOSPHATE)

Trisodium Phosphate
CRYSTALLINE
MONOHYDRATE



Sodium Phosphates

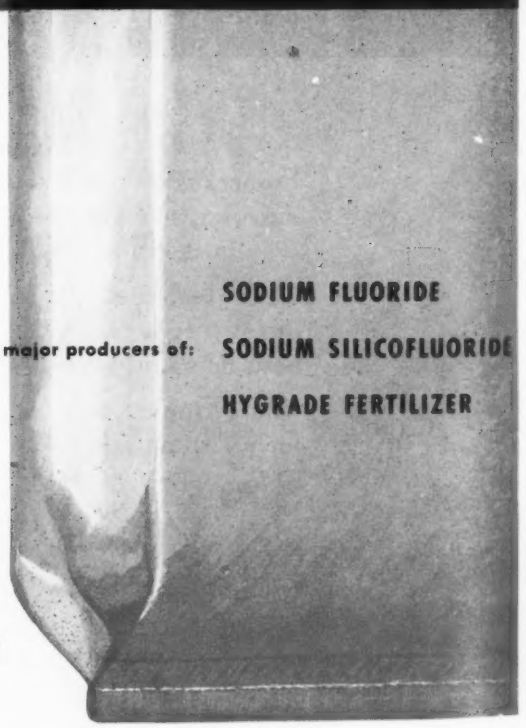
BLOCKSON

Trisodium Phosphate
Chlorinated

Disodium Phosphate
ANHYDROUS
CRYSTALLINE

Monosodium Phosphate
ANHYDROUS
MONOHYDRATE

Sodium Acid Pyrophosphate



also major producers of:
SODIUM FLUORIDE
SODIUM SILICOFLUORIDE
HYGRADE FERTILIZER

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Division of Olin Mathieson Chemical Corporation
JOLIET, ILLINOIS

Looking for a home-laundry dry bleach with "sales appeal"?

Then look at the exclusive sales advantages of Halane . . .

Halane is safe!

It's safe on cotton, nylon, acetate rayon. Even *solid* Halane added *directly* to clothes made of these fibers would not damage the fabrics. Halane bleaching powder can be safely packaged in either glass containers or cardboard boxes.

Halane costs less!

Increased production economies have brought the price of Halane in l.c.l. and carload lots down to a new low. (Halane is the most widely used organic, chlorine-bearing base for dry bleaches in the home-laundry field.)

Halane is "controlled"!

The bleaching ingredient (active hypochlorous acid) is released from Halane at a controlled rate. Its rate of release depends on bleaching conditions. This control makes even badly stained or grayed fabrics come out sparkling white.

Halane gives clothes "extra life"!

In actual laundry tests – 20 consecutive soak, wash, and rinse cycles – Halane-bleached clothes showed a minor 2% loss in tensile strength compared to a 10% loss suffered in ordinary bleaching.

Halane is versatile!

Halane may be added along with soaps or synthetic detergents for use in the wash cycle, or it can be added to the pre-wash soak or rinse cycles.

Our skilled chemists and engineers . . . modern research laboratories . . . and 65 years' experience as a leading producer of chemicals, are at your service. Our new Halane data sheet can help you plan a formulation for the home-laundry market . . . send for it today. *Wyandotte Chemicals Corporation, Dept. SCS-8, Wyandotte, Mich. Offices in principal cities.*

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MICHIGAN ALKALI DIVISION

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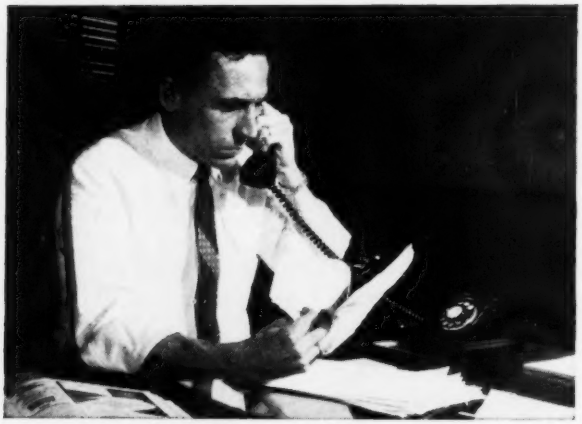

CUSTOMER IN COLUMBUS needs a special proprietary chemical *immediately*. Manufacturer of the chemical has none on hand — nearest stock point is 350 miles away. Situation desperate, can Merchants do something?

MERCHANTS' MAN IN CINCINNATI calls the manufacturer, locates several drums of the chemical at the plant of a nearby soap company. They agree to lend three drums to meet the emergency. Merchants' truck makes the pickup.

AT MERCHANTS' WAREHOUSE, the drums are loaded into the car of "Dutch" Spatta, manager of Merchants' Cincinnati office. Regular delivery by truck will take too long.

A FAST 108 MILES LATER "Dutch" delivers the drums in time to keep production going. It was somebody else's product and somebody else's problem, but Merchants again lived up to its reputation for helping a customer out of a jam.

WHY MERCHANTS' CINCINNATI MANAGER DROVE 108 MILES TO DELIVER SOMEBODY ELSE'S PRODUCT —

At Merchants, service goes beyond the mere filling of orders for industrial chemicals. Each office of Merchants' nationwide chain makes a point of becoming familiar with its customers' problems. In the past 35 years Merchants has frequently "walked the extra mile" to help a production man out of a tight spot. Among the products offered are acids, alkalis, fungicides, surfactants, chlorinated solvents, emulsifiers, laundry compounds, soaps, dry ice and chemical specialties.

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SURFACTANTS
by
NINOL

for better, faster degreasing with KEROSENE EMULSION DEGREASERS emulsify with

NINATE 411

Removal of grease and soil from engine blocks, machined pieces or concrete floors is simplified by using a blend of kerosene and Ninate 411—a new sulfonated emulsifier by NINOL.

Ninate 411 is readily dissolved in kerosene or Diesel oil; the clear solution is applied to the greasy work and allowed to soak in. The emulsified soil is then easily washed away with water. Since Ninate 411 combines both emulsifying and detergent action to a high degree, a clean surface is assured.

Ninate 411 also exhibits unusual coupling power for water and petroleum solvents; and *clear* blends of kerosene or mineral oil with water can be formulated with it. These *clear* emulsions of oil and water can be used as mop treatments, "waterless" hand cleaners, printing press cleaners, etc.

★ **Send for Samples, Data Sheets . . .**

NINOL *Detergents— —Emulsifiers*

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DEPT. S,
PRUDENTIAL PLAZA
CHICAGO 1, ILLINOIS

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Please send working samples of and complete information about NINATE 411.

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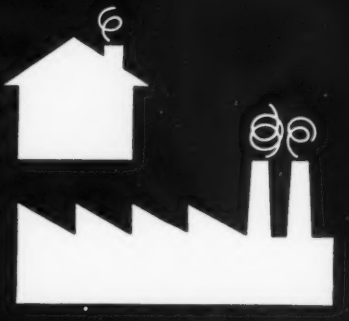
Now you can give a pleasant fragrance to

household and industrial detergents for less than 3¢ a gallon

or 50¢ per 100 pounds



DETERGEROLS

These low cost, fine quality odors are designed specifically to give excellent results in both powdered and liquid detergents. Select one or more of these 8 distinctive odors to give your household or industrial detergent a pleasant fragrance that identifies it as YOURS — *and brings profitable repeat business!*

Only $2.05 per pound.

in 8 odors

Detergerol Apple Blossom
Detergerol Bouquet
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Detergerol Lilac
Detergerol Pine
Detergerol Rose
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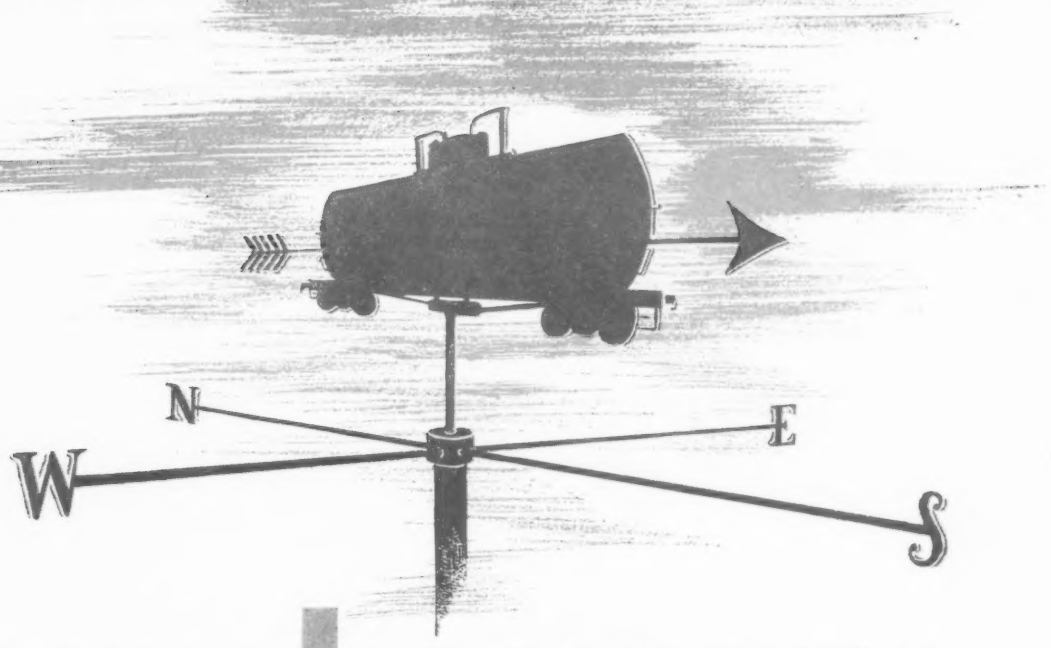
"Situated to Serve"

the growing soap and detergent industry!



CAUSTIC SODA

Liquid 73%
Liquid 50%, Regular, Rayon and Low — Chloride Grade
Flake, Solid and Ground, 76% Na_2O

CAUSTIC POTASH

45 and 50% Liquid — Flake and Solid

Makers of soaps and detergents depend on Westvaco for their alkalis because Westvaco is situated to serve them best.

We're strategically located in South Charleston, W. Va., with one of the largest single electrolytic caustic-chlorine operations in the world. Barges, tank trucks and a fleet of railway tank cars are ready to reach you by inland waterway, highway or rail. Dependable deliveries enable you to economize on inventory and warehousing.

With 50 years experience, we're best situated to serve you with the uniform high quality you require and with unexcelled technical service, too.

May we quote on your needs?

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FOOD MACHINERY AND CHEMICAL CORPORATION

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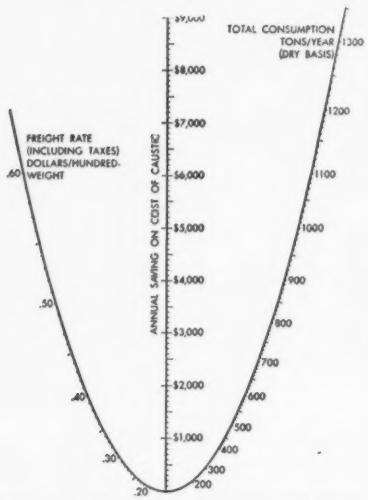
FMC CHEMICALS INCLUDE: BECCO *Peroxygen Chemicals* • WESTVACO *Alkalis, Chlorinated Chemicals and Carbon Bisulfide* • NIAGARA *Insecticides, Fungicides and Industrial Sulphur* • OHIO-APEX *Plasticizers and Chemicals* FAIRFIELD *Pesticide Compounds and Organic Chemicals* • WESTVACO *Phosphates, Barium and Magnesium Chemicals*

BRIEFS
for caustic soda buyers

50% or 73%? Which flake size? Choosing a supplier

50% to 73%—
some save, some don't

To estimate quickly whether you can save by switching from 50% to 73% liquid caustic soda, simply draw a line on this nomograph.



Start at your freight rate and draw to your annual consumption in tons, dry basis. Your approximate savings on freight will appear where you intersect the center line.

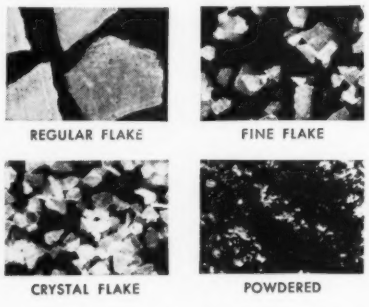
From this figure, subtract annual depreciation for dilution equipment. (We'll be glad to advise you on cost of this equipment.)

If you still show a saving, it would be wise to consider the big switch seriously.

For more facts on the economics of 50% and 73% caustic, check the coupon for a copy of our pocket-size *Caustic Soda Buyer's Guide.*

And for specific technical advice centered on *your* requirements, just phone or write the nearest Hooker sales office.

Especially good for repackaging in cleansers and other specialties are these four sizes of Hooker flake caustic soda, all shown actual size.



"Regular," "fine," and *"crystal"* sizes are nondusting.

With these flakes, you're sure of actually *getting* the size you order. In a tightly-controlled flaking-screening operation, we make the flakes just thick enough to stand up well and stay the same size in transit.

Regular flake is shipped in 100-lb. and 400-lb. steel drums; the other sizes in 450-lb. steel drums.

Choosing a supplier

Service is a large part of what you pay for when you buy caustic soda.

Here are some important "service" points to look for when you're considering a source of supply. (As a Hooker customer, you enjoy *all* of them.)

1. Supply security. How flexible are your supply lines? For instance, a supplier with plants and stock points on deep water may be able to offer you a choice of rail or water delivery. This can assure you steady supply in case of rail service interruption.

2. Realistic contracting. Your agreements with your supplier should realistically reflect your expected needs *and* the supplier's ability to consistently deliver the tonnage you need. Best yardstick for measuring this ability is a supplier's performance record. Hooker, for example, has an unbroken 50-year record of fulfilling contract commitments.

3. Engineering help. A supplier's engineering staff can help you set up a new caustic handling system—or revamp an old one—with advice, and with actual design assistance.

Check items you'd like to receive:

☐ *Caustic Soda Buyer's Guide.* Lists advantages of 50% and 73% solutions; comparative costs; capacities of tank cars and other containers; useful shipping information.

☐ Technical data on liquid, flake, and solid caustic soda.

FOR INFORMATION on these Hooker chemicals used in soaps, detergents, cleansers, polishes and other specialties, check here:

☐ Cyclohexanol
☐ ortho-Dichlorobenzene
☐ para-Dichlorobenzene
☐ Nialk Caustic Potash
☐ Sodium Sulfide

Clip and mail to us with your name, title, company address.

When requesting samples, please use business letterhead to speed delivery.

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HOOKER ELECTROCHEMICAL COMPANY

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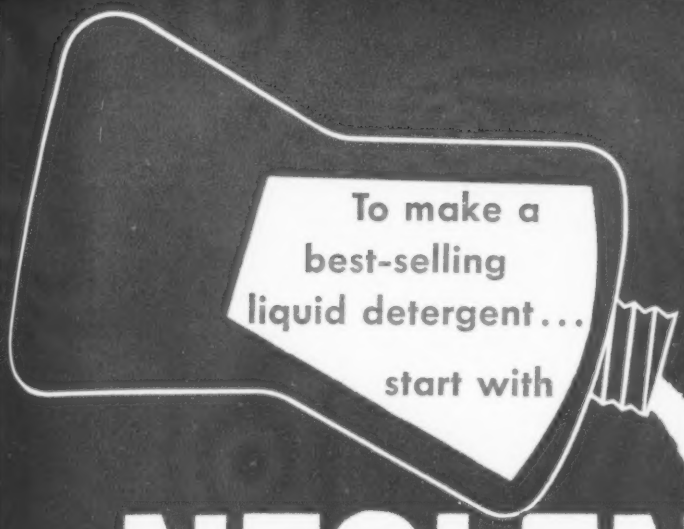

NEOLENE 400

intermediate for synthetic detergents

Throughout the nation, more and more homemakers are buying liquid detergent formulations in vast quantities — and sales figures are still growing. If you're a processor who is looking for an economical raw material that can mean much to you in profits and sales, consider NEOLENE 400.

This high-quality hydrocarbon is used by the world's largest producers of synthetic detergents. Sulfonates produced from NEOLENE 400 are well-suited for compounding in liquid formulations. Let us give you all the facts about NEOLENE 400 and its use as a detergent raw material. Samples sent on request.

In addition to NEOLENE 400, you can count on Conoco for:

WATER-SOLUBLE SULFONATES produced from NEOLENE 400. Available as sulfonate slurry, sulfonic acid, or in spray-dried and drum-dried forms.

OIL-SOLUBLE SULFONATES manufactured by sulfonating synthetically produced hydrocarbon under closely controlled conditions.

CONOCO H-300, secondary plasticizer for vinyls—outstanding light stability . . . improved low-temperature flexibility . . . viscosity depressant and stabilizer.

TECHNICAL ASSISTANCE—Continental Oil Company is thoroughly experienced in the manufacture and application of sulfonates. Let us help you with your particular problems. Continental Oil Company, Petrochemical Department, Division A-8, 630 Fifth Avenue, New York 20, New York • 1353 No. North Branch Street, Chicago, Ill. • Export: Airco Company International, 60 East 42nd Street, New York 17, New York.

CONOCO Petrochemicals

Petrochemical know-how from the ground up!

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CONTINENTAL OIL COMPANY

CHEMICALS BY Marchon WHITEHAVEN, ENGLAND

ALKYL ARYL SODIUM SULPHONATES

based on

tetrapropylene polymer

***NANSA**

brand

***NANSA H.S. FLAKE**

80% dodecyl benzene sodium sulphonate

***NANSA S. POWDER**

40% spray dried dodecyl benzene sodium sulphonate

***NANSA LIQUIDS**

built alkyl aryl sodium sulphonate liquids

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bead type totally spray dried synthetic detergent containing molecularly condensed phosphates, carboxy-methyl-cellulose, silicates, foam builders etc.

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MARCHON PRODUCTS LTD. Head Office: Whitehaven. Telephone: Whitehaven 650 and 797 (11 lines). Telegrams: Marchonpro, Whitehaven. London Office: 140, Park Lane, W.1. Telephone: Mayfair 7385 (3 lines). Telegrams: Marchonpro, Audley, London.

Manufacturers of...

ORGANIC DIVISION: Fatty alcohol sulphates (EMPICOLS), emulsifiers (EMPILANS), self-emulsifying waxes (EMPIWAXES), alkyl aryl sulphonates (NANSAS) and other detergent bases, additives and emulsifiers in powder, paste and liquid forms.

***INORGANIC DIVISION:* phosphoric acid and complex phosphates.**

Chicago, Illinois . . . where Dow caustic serves alkali formulators.

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DEPENDABLE CAUSTIC SODA DELIVERY IS ASSURED FROM DOW

Dow is the one producer, you know, supplying caustic soda to industry everywhere. Wherever you produce, you're *sure* of getting rapid, dependable service from Dow.

The *three* modern Dow plants and *six* additional shipping terminals . . . stretching from Bayonne, New Jersey to Los Angeles, from Chicago to Freeport, Texas . . . start the order to you immediately on your teletype, wire or call. Ocean-going tankers, inland barges, tank cars and tank trucks . . . the full facilities of the industry's most extensive and flexible distribution network go to work without delay, getting Dow caustic to you *now*.

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you can depend on DOW CHEMICALS DOW

LOW DENSITY

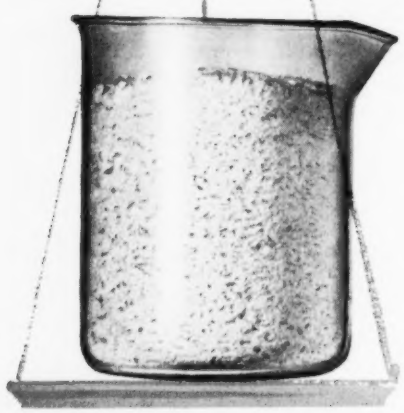
D-40

Increase your profits on re-packaged detergents!

It's simple arithmetic—buy D-40 SF (flakes) by weight and sell it by volume. Because of D-40 SF's low density it doesn't require as much product to fill your packages so your profits are increased. You will also find D-40 flakes firm and without the usual dustiness inherent in so many spray-dried materials.

D-40 SF is readily soluble in hard or soft water, either hot or cold. It's free-flowing, provides maximum amount of foam and maintains foam stability in presence of grease. Being neutral, D-40 SF will not harm painted surfaces.

Packaged in either 70 lb. bags or 170 lb. drums for easy handling. Compare D-40 SF with the product you are now using. Just contact the Oronite office nearest you for samples and complete information.



D-40SF Showing bulk density of D-40 SF flakes—
Oronite's alkyl aryl sulfonate.

BRAND X Showing bulk density of a typical competitive alkyl aryl sulfonate.

"The world's largest producer of synthetic detergent raw materials"

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3582

After Closing . .

Continental Car-Na-Var Merger Approved

THE merger of Continental Car-Na-Var Corp., Brazil, Ind., with National Vending Corp., Westbury,

Lee Hall

N. Y., has been approved by stockholders of Continental, it was announced late last month by Harold Roth, president of National. Claimed to be the second largest automatic merchandising and vending machine organization in the U.S., National plans to start to compete for the $160,000,000 consumer floor wax market this fall. An initial advertising budget of $650,000, to be handled by Product Services, Inc., has been appropriated, according to Lee Hall, recently appointed vice-president in charge of sales by Continental Car-Na-Var.

Continental Industries, Inc., has been proposed as the name of the merged firms, and Continental Car-Na-Var is a division of the new enterprise.

The first consumer floor wax product to be introduced by the new firm will be "Continental 18," a liquid, self-polishing floor wax with a carnauba wax base. It will be launched in key cities this fall and will be distributed nationally early in 1957.

Lee Hall, in charge of sales for Continental Car-Na-Var has been managing sales in the housewares field for 24 years. During the past eight years he was sales manager for Heller Hostess-Ware. Earlier he was with Decorative Cabinet Corp., New York, and Federal Seat Corp.

New officers of Continental Industries include: Max Roth, chairman of the board; Harold Roth, president; Hermon C. Keen, vice-president; David G. Roth, vice-president and Robert S. Hirsch, secretary-treasurer.

Mr. Keen formerly was president and director of Continental Car-Na-Var Corp., and prior to that was chief engineer and vice-president. The other officers have all been officers of National Vending Corp.

Continental Car - Na - Var Corp. was incorporated on June 13, 1931, in Indiana as successor to Continental Chemical Corp., which company was incorporated Oct. 3, 1919 as an Illinois corporation. Continental makes and sells machines for polishing, scrubbing and cleaning of floors, floor coverings and walls; as well as heavy duty floor treatments for industrial and commercial applications; germicides, insecticides and disinfectants. In addition to direct sales to the industrial trade under Continental trade mark products, a wholly owned subsidiary, Rex-Cleanwall Corp. has sold its products to jobbers and distributors. Approximately 61 percent of the total volume of sales of Continental during the last fiscal year were attributed to direct sales of its products, while 36.9 percent resulted from sales to jobbers and distributors. Sales of floor treatment materials represented about 55.4 percent of the total sales of Continental and its subsidiaries, while 44.6 consisted of sales of miscellaneous products. Continental owns plants in Brazil, Ind., and Los Angeles, Calif.

★

David Hoyer Dies

David G. Hoyer, 46, a chemical engineer with Allied Chemical & Dye Corp., New York, died at his home in Old Greenwich, Conn.,

David Hoyer

July 30. Before joining Allied, Mr. Hoyer had been with Baird Chemical Corp., New York, and earlier had been export manager of John Powell & Co., New York.

A native of Buffalo, N. Y., and a graduate chemist of Princeton, he was a Navy veteran of World War II. In addition to his father, Cris M. Hoyer of Coral Gables, Fla., Mr. Hoyes is survived by his wife, the former Hope Kellock; a daughter, Mrs. Sandra H. Collins; and a son, Cris Hoyer, all of Old Greenwich.

★

Purex Elects Burkes

Its intention to elect Oscar Burke and Frank A. Burke, Jr., directors and officers of Purex Corp., South Gate, Calif., were announced Aug. 7, by Purex. Oscar Burke and Frank Burke are president and secretary-treasurer, respectively, of Manhattan Soap Co., New York, which has been merged with Purex Corp. The Manhattan Soap offices at 441 Lexington Ave., New York, will be maintained, it was said by A. C. Pelletier, president of Purex.

NSSA Fall Meetings Start Sept. 7

REGIONAL meetings of the National Sanitary Supply Association, ranging from one-night dinner-discussion sessions to a three-day trade show and convention, are scheduled for this fall and get under way next month, it was announced recently by Leo J. Kelly, executive vice-president of NSSA.

First to be held is a two-day southwestern regional meeting at the Hilton Statler Hotel, Dallas, Sept. 7 and 8. In charge of the Texas meeting are Lacy Crain, head of Conco Chemical Co., Dallas, last year's NSSA president and currently serving on the board, and Marvin Anderson, of Louisiana Paper Co., Shreveport, southwestern regional vice-president.

Three "caravan" type meetings begin at Pittsburgh's Webster Hall Hotel, Tuesday evening, Sept. 18, with Maury Rudin of Iron City Wiping Materials Co., Pittsburgh, as program chairman. The group moves to Cleveland, where a meeting will be held at the Hollenden Hotel, Wednesday evening, Sept. 19. Malcolm Zucker of State Chemical Co., Cleveland, is meeting chairman. On the following night, Sept. 20, a meeting will be held in Detroit, time and place to be announced. N. H. McRae, head of Multi-Clean Products Co., Inc., St. Paul, and NSSA central regional vice-president is in charge of this affair.

A two-day eastern regional meeting is scheduled to be held Oct. 11 and 12 at the Park Sheraton Hotel, New York. A half-day session has been set for demonstration and discussion of selling washroom sanitation. A panel of manufacturers of washroom sanitation and maintenance products will also discuss the subject, with a question and answer period to follow.

Milton Greenberg, United Metal Cabinet Co., Pottsville, Pa., and eastern regional vice-president of NSSA, is general chairman of the New York meeting. Burton L. Feinson, American Dispenser Co., New York, and Samuel Newman, Creco Co., Long Island City, N. Y., are co-chairmen. Jack Hirsch, Formula Floor Products Co., Newark, N. J., is chairman of the program committee.

The first NSSA west coast trade show and convention is slated to be held at the Ambassador Hotel, Los Angeles, Nov. 25-27. In addition to exhibits by manufacturers of sanitary chemicals, equipment and related items in the 147 booths available, there will be discussion sessions. Albert I. Mack of Easterday Supply Co., Los Angeles, has been appointed general chairman of the meeting.

Drawings for booths in which over 110 manufacturers will exhibit at the West Coast trade show were held in Los Angeles, last month.

★

New Seaquist Valve

A new nylon valve that is designed to handle a wide range of aerosol dispensed products was announced late last month by Seaquist Manufacturing Corp., Cary, Ill. According to E. J. McKernan, sales manager of the company, aerosol producers now can use this one valve for literally hundreds of pressurized products. Included would be insecticides, shaving creams, room deodorants, hair sprays, etc.

The new Seaquist valve, 750NN, is claimed to be resistant to corrosive products due to its nylon construction, and yet work well with non-corrosive chemicals.

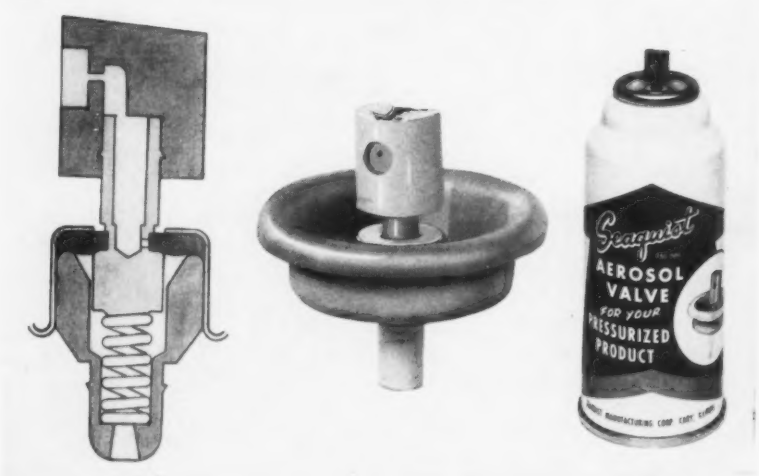
A sealing and retaining ring holds the pressure button firmly on the stem to eliminate the possibility of losing buttons and to prevent seepage between the stem and the button. Three controllable orifices which permit any desired density of spray or uniformity of spray pattern are said to be an exclusive feature of the valve. The same basic design can be used on foam type products.

★

Wasserman Leaves Dura

Kurt J. Wasserman, vice-president in charge of technical sales and service for Dura Commodities Corp., New York, early this month announced his resignation to form Wasco Laboratories, East Skyline Lake Drive, Midvale, N. J. He is specializing in technical research and consulting on chemical specialties, including wax and plastic based products. Prior to joining Dura in Jan., 1955, Mr. Wasserman had been chief chemist and production manager of Trio Chemical Works, Inc., Brooklyn.

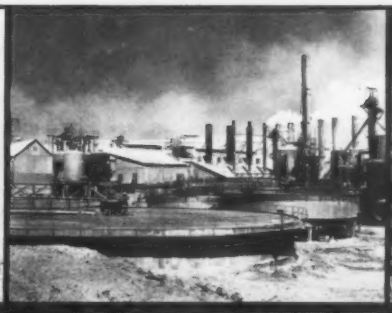
Miss Elizabeth Maguire has been appointed manager of technical sales and service for Dura, it was announced Aug. 8, by I. Y. Straus, president. Miss Maguire has been with Dura for a year and a half in technical sales and service. Previously, she was associated with Lederle Laboratories and U. S. Testing Co. She is a graduate of Fordham University.



THERE'S ONLY 1 BASIC PRODUCER OF

caustic potash

INTERNATIONAL MINERALS & CHEMICAL CORPORATION



MINES	REFINES	MANUFACTURES
at Carlsbad	at Carlsbad	at Niagara Falls
—the raw material (sylvite ore)	—potassium chloride	—caustic potash
KCl - NaCl	KCl	KOH

What's the advantage to you in buying from a basic producer? Greater security of supply. Consistently uniform quality. High purities. Prompt shipments on schedule.

International, alone among suppliers of Caustic Potash, is a *basic producer*, controlling production from ore bed to finished product. From sylvite ore mined at the 900 ft. level, the Carlsbad refinery produces electrolytic grade KCl. This 99.95+% pure material is shipped to the Niagara Falls plant for the manufacture of KOH and other potash salts.

CAUSTIC POTASH
CARBONATE OF POTASH
POTASSIUM CHLORIDE
SULFATE OF POTASH
HYDROFLUOSILICIC ACID
MAGNESIUM OXIDE
LIQUID CHLORINE
MURIATIC ACID

International Minerals & Chemical

potash division

INTERNATIONAL MINERALS & CHEMICAL CORPORATION • GENERAL OFFICES: 20 NORTH WACKER DRIVE, CHICAGO 6
61 BROADWAY, NEW YORK 6 • MIDLAND, TEXAS • FULTON NATIONAL BANK BLDG., ATLANTA, GA.

...when you filter with CELITE

THE FLOOD of new brands in the liquid soap and detergent field has made shoppers more selective than ever before. A cloudy product loses out when there's a sparkling clear one on the shelf beside it. And, chances are the ones that sparkle brightest have been filtered with Celite* diatomite filter aids.

Celite provides its exceptional clarity by means of a filter cake that is hundreds of times finer than the finest wire mesh. Yet, there are 2,500,000 filter channels in each square inch to give the fastest flow rates with any standard filter. Operation is automatic and economical.

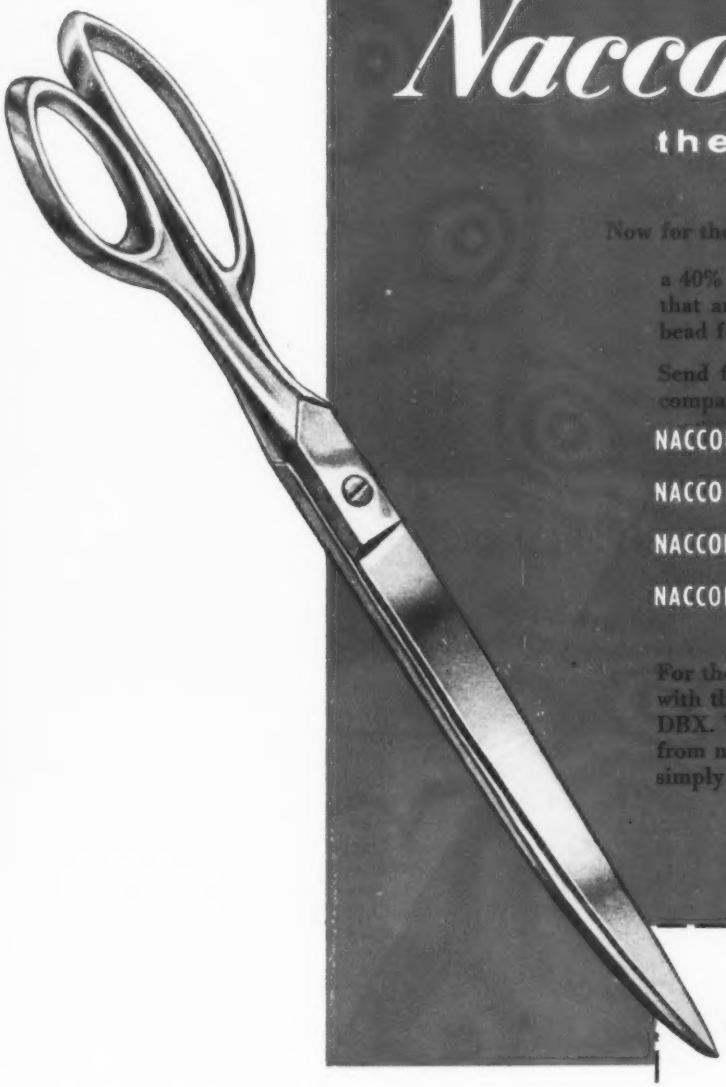
Many manufacturers are using Celite today for filtering soaps and detergents which are in a liquid state at some stage. Many ingredients for these products, as well as other fats and oils, can also be successfully clarified with one of Celite's nine grades. Call a Celite engineer for further information or write Johns-Manville, Box 60, New York 16, N. Y. In Canada, 565 Lakeshore Road East, Port Credit, Ontario.

*Celite is Johns-Manville's registered trade mark for its diatomaceous silica products

JOHNS MANVILLE JM PRODUCTS

Johns-Manville CELITE FILTER AIDS

Now—*high-gear production of the newest form of Nacconol*



Nacconol® DBX

the super-dense bead

Now for the first time ever—

a 40% active spray-dried alkyl aryl sulfonate—
that answers the industry's need for a versatile
bead form *as dense as most flake materials.*

Send for sample and see for yourself how in
comparison with most flake products—

NACCONOL DBX essentially eliminates dusting.

NACCONOL DBX does not tend to lump or agglomerate.

NACCONOL DBX assures more uniform mixtures.

NACCONOL DBX makes better looking products—
adds new sales appeal.

For the competitive days ahead, start today
with the *brand new super dense bead*—NACCONOL
DBX. Your orders will be quickly filled
from nearby warehouse stocks. For your sample,
simply fill out the handy coupon.

Without cost or obligation,
send a Nacconol DBX sample to:

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in your production...
choose it wisely with the
assistance of those skilled and
experienced in soap perfuming.

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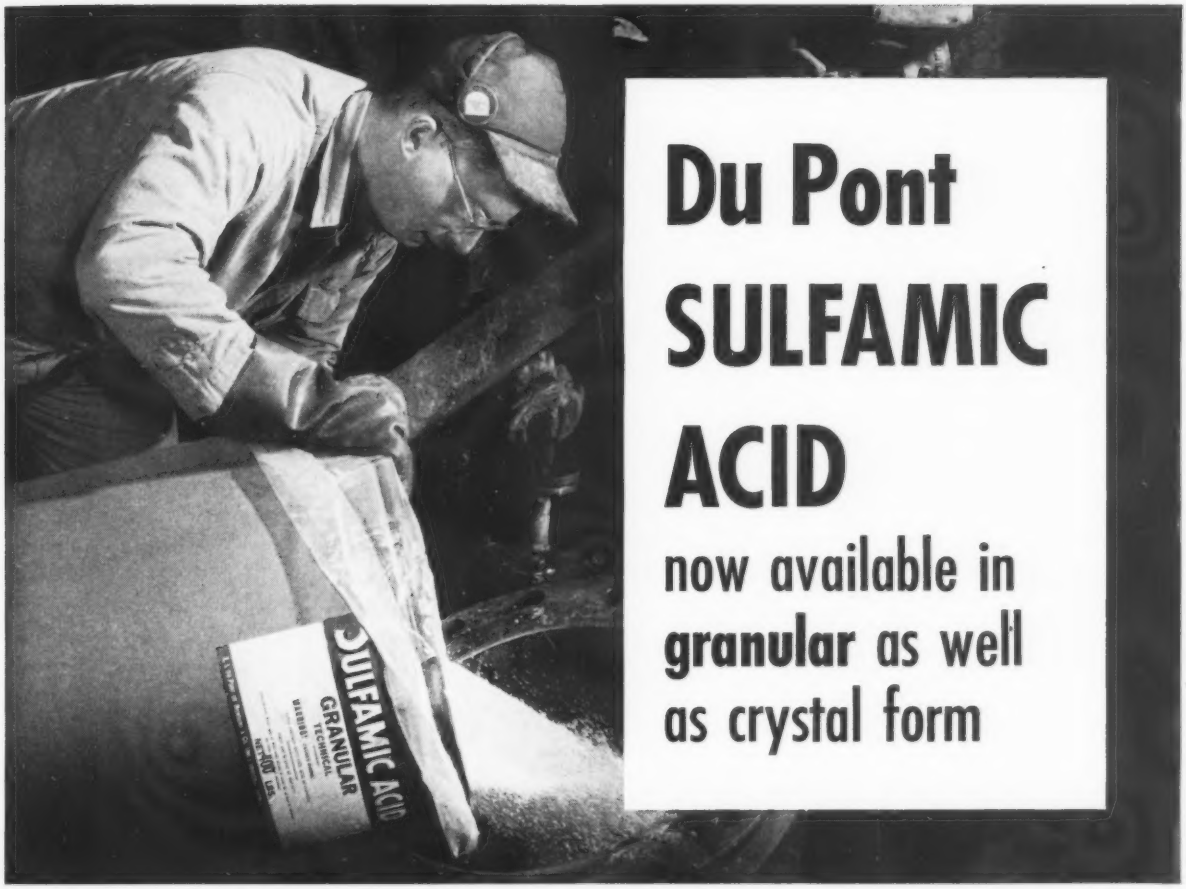

Du Pont SULFAMIC ACID

now available in **granular** as well as crystal form

Unbeatable for formulating scale removers and acid-type cleaners

The new free-flowing . . . non-caking granular sulfamic acid is another advance in the production of practical, easy-to-handle efficient acid cleaners. Sulfamic acid will handle the toughest cleaning job. Whether you are producing cleaners for copper-bottom pans, air-conditioning equipment, or boilers, sulfamic acid enables you to produce a cleaner that will do it fast, safely, and economically *without fumes*. And metal corrosion is easily controllable in sulfamic-based cleaners.

What's more, sulfamic acid eliminates special-handling procedures . . . glass breakage or acid-spilling damage . . . expense of returnable containers.

HERE'S WHERE DU PONT SULFAMIC ACID CAN BE USED!

Metal Cleaners and Brighteners
Brick and Concrete Cleaners
Dishwashing-Machine Cleaners
Sugar-Evaporator Descalers
Food-Processing Equipment
Dairy Milk-Stone Cleaners
Paper-Mill Felt and Wire Cleaners
Brewery Cleaning
Heat-Exchanger Cleaners
Marine Cleaners
Toilet-Bowl Cleaners
Copper Cleaners
Silver-Dip Cleaners
Stainless-Steel Cleaners

CRYSTAL GRADE. 99% active material for synthesis and chemical uses where high purity is required.

GRANULAR GRADE. A specially prepared, new, free-flowing, non-caking sulfamic acid designed for use in your formulated compounds.

DU PONT

SULFAMIC ACID

DU PONT

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Better Things for Better Living . . . through Chemistry

E. I. du Pont de Nemours & Co. (Inc.)
Grasselli Chemicals Dept., Room N-2539
Wilmington 98, Delaware

I would like more information about Du Pont sulfamic acid for use in:

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Name _____ *Position* _____

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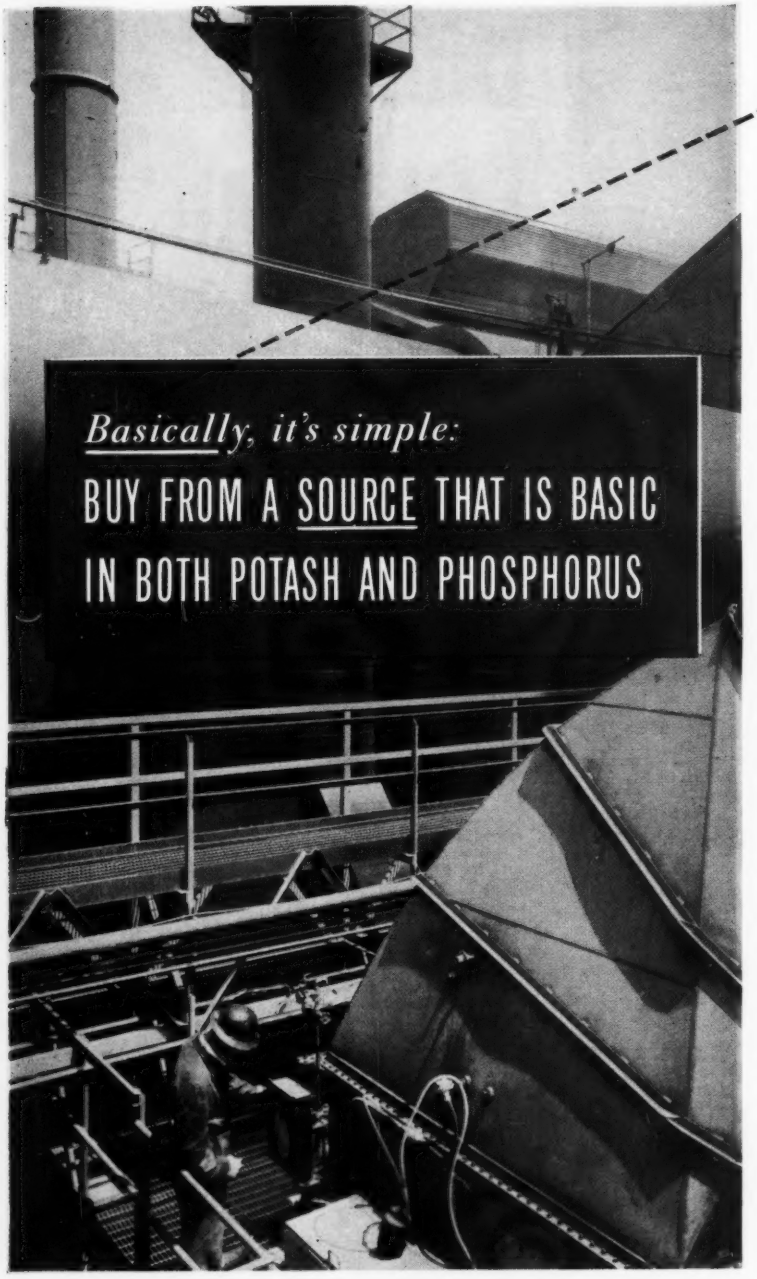
Dependable supplies of potassium phosphate?



Contract or spot, you'll be sure of uninterrupted supply, fast shipments, uniform quality and low delivered-prices when you rely upon Westvaco.

Westvaco is a fully-integrated producer of a full line of *both* potassium and sodium phosphates. No other producer can serve you so widely and so well.

MONOPOTASSIUM PHOSPHATE
DIPOTASSIUM PHOSPHATE

Completely and quickly-soluble forms that are finding ever-increasing use in pharmaceuticals and soluble "plant foods".

TETRAPOTASSIUM PYROPHOSPHATE
POTASSIUM TRIPOLYPHOSPHATE
TRIPOTASSIUM PHOSPHATE

We have long supplied these important phosphates for use in rubber, shampoos, soaps, shaving creams, electroplating, liquid detergents and other applications.

Whatever your need for potassium phosphates, we can give you the benefit of our broad experience. Contact our office nearest you.

Westvaco® CHEMICALS

Westvaco Mineral Products Division
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fmc FOOD MACHINERY AND CHEMICAL CORPORATION

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DISHWASHING COMPOUNDS

DAIRY CLEANERS

CAR WASHES

LAUNDRY DETERGENTS

RUG, UPHOLSTERY CLEANERS

GENERAL MAINTENANCE CLEANERS

All these can be Made Better with

ORVUS
AB GRANULES

Whatever powdered products you formulate—from bubble baths to rug cleaners—your best bet is Orvus AB Granules!

You'll get far smoother formulations because Orvus AB flows freely . . . always blends intimately with other ingredients. What's more, granule breakdown, dustiness, stratification, sifting or settling out during mixing are kept to a minimum because of the unusual granule characteristics of Orvus AB.

And when it comes to effective performance, you can't beat Orvus AB for exceptional detergent, sudsing, wetting, dispersing and emulsifying properties. A 40% active alkyl aryl sulfonate, Orvus AB offers many other important advantages you'll discover when you use this fine synthetic detergent. For more information on specific applications or formulas, drop a postcard to . . .

Procter & Gamble

Bulk Soap Sales Department,
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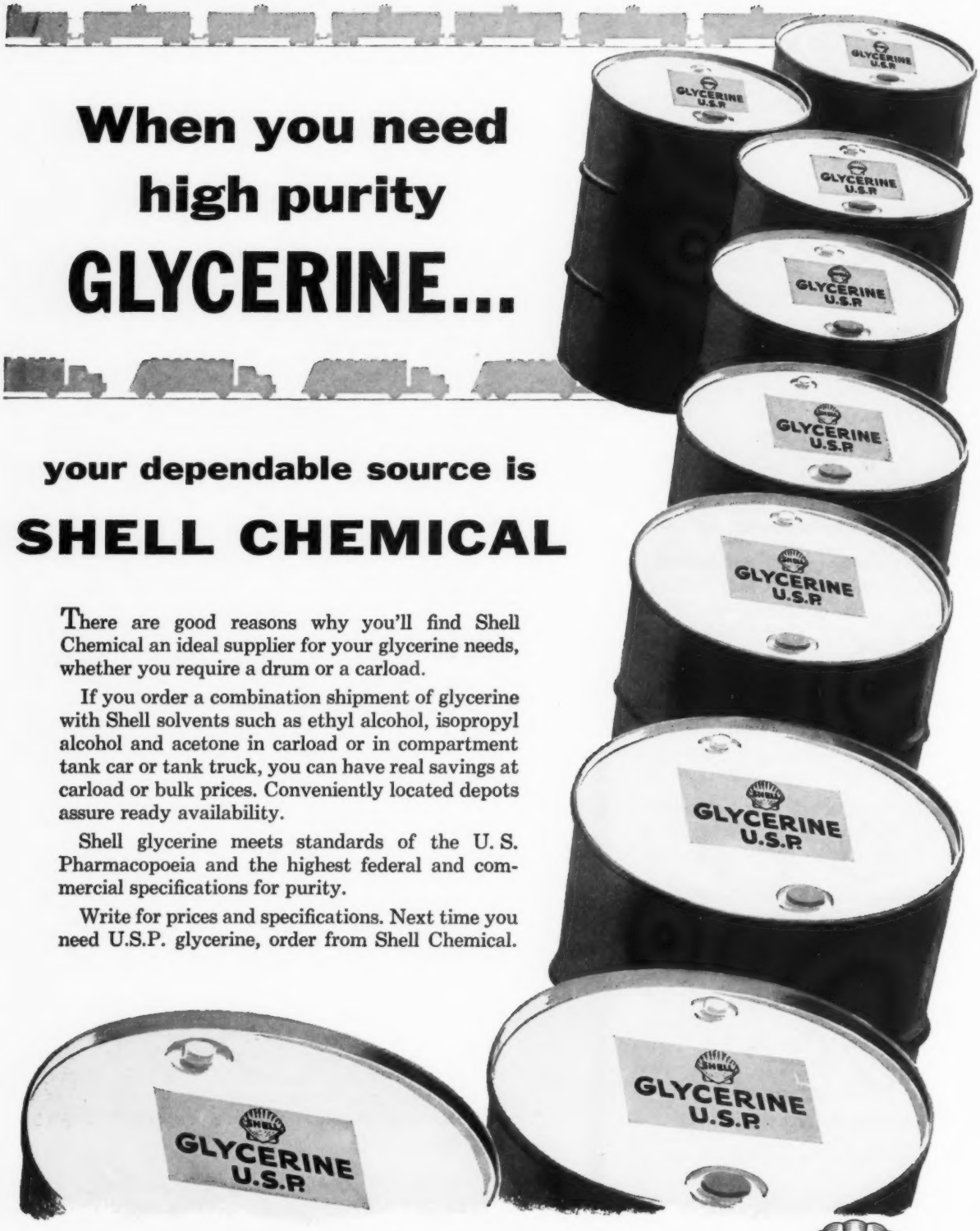
America's largest manufacturers of top-quality soaps and synthetic detergents

When you need high purity GLYCERINE...



your dependable source is SHELL CHEMICAL

There are good reasons why you'll find Shell Chemical an ideal supplier for your glycerine needs, whether you require a drum or a carload.

If you order a combination shipment of glycerine with Shell solvents such as ethyl alcohol, isopropyl alcohol and acetone in carload or in compartment tank car or tank truck, you can have real savings at carload or bulk prices. Conveniently located depots assure ready availability.

Shell glycerine meets standards of the U. S. Pharmacopoeia and the highest federal and commercial specifications for purity.

Write for prices and specifications. Next time you need U.S.P. glycerine, order from Shell Chemical.

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PUT IT RIGHT WHERE YOU WANT IT
and make it stick

pH
14
13
12
11
10
9
8
7
6
5
4
3
2
1

How strong a cleaner do you need? Mild — Medium — Heavy Duty? You can peg the pH exactly where you want it with . . .

Cowles
DRYMET
Anhydrous Sodium Metasilicate

Cowles Drymet blends easily with caustic soda, carbonates, phosphates, soaps, synthetics. Drymet gives you better detergency—more thorough soil dispersion—more complete emulsifying.

Let Drymet help on your formulating problems.

Get this Drymet File Folder for technical data

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Company_____
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Cowles CHEMICAL COMPANY
CLEVELAND 3, OHIO

In Colgate's New Advanced Detergent

THE KEY IS CMC

"Specially created to wash clothes superclean and sparkling white"—That's the claim made for Colgate's new AD, and Hercules® CMC is part of the formulation to see that the promise is fulfilled.

CMC's exceptional soil-suspending properties insure that dirt particles always leave with the rinse water, are never redeposited on the clothes. That leaves this new advanced detergent free to do a thorough and efficient job of loosening even deeply imbedded dirt. CMC does the rest.

From special preparations created for commercial laundries to formulations for home use, leading manufacturers have learned that economical CMC can improve their product, increase customer satisfaction. If you haven't explored the advantages CMC holds for you, we'll be glad to send you technical information and a testing sample. Just write Hercules.

THREE SEPARATE SIZES, ranging from the giant 16-pound box to the 1½-pound container, make AD available to suit every convenience. This new advanced detergent, a product of the Colgate-Palmolive Company, provides "just right suds" for automatic washers.

Virginia Cellulose Department

HERCULES POWDER COMPANY

INCORPORATED

961 Market St., Wilmington 99, Del.

VS56-3

. . . in brief

as the editor sees it . . .

DETERGENTS . . . . While liquid detergents seem to be buzzing ahead with the throttle wide open, we feel that there should be a slight pause while stock is taken of the entire situation. Soaps have been hit a body blow by detergents and now some observers tell us that liquids are in a fair way of pushing powdered detergents right out of the picture.

Rumblings that the new heavy duty liquids are not all that they should be in detergent efficiency have been heard from several directions. The facts as we get them are that they compare quite unfavorably with comparable powders in washing ability and if they are to progress, their cleaning efficiency will have to be stepped up.

What's more, — and this may come as something of a shock to our all-out advocates of liquids, — for home dishwashing, certain of the powders show up superior to the well-known dishwashing liquids. This we saw demonstrated with medium hard water in a hand dishwashing operation somewhat to our amazement.

So before we dig a grave for detergent powders alongside of laundry soaps, as some of our advanced thinkers seem to be doing, let us pause a bit and give the muddy waters a chance to clear up.

* * * * *

SLACK FILL . . . . Federal Trade Commision citation of a well-known aerosol packer for slack fill came as no surprise to those concerned with aerosols. The problem has been batted around by aerosol people for some time. It has engendered heated accusations and just as heated counter accusations. Unquestionably there is a safety factor to be considered in packaging Christmas snow aerosols, the product involved, and other types of aerosols. The Safe Fill Subcommittee of the Scientific Committee of the Aerosol Division of C.S.M.A. recently reported that an aerosol container is considered to have a safe-fill if there is 7.5 percent headspace within the container when contents are heated to 130° F. Earlier minimum standards of fill of specific aerosol products including snow, room deodorants and insecticides had been suggested by C.S.M.A., with more under study now.

This aerosol slack fill matter is more complicated than the case of a slack filled box of soap chips or scouring powder. Obviously, in every aerosol product, there is a serious safety factor to be considered. All the more reason why every packer should have researched the matter more deeply before rushing his product to market, slack filled or not. Some did. Most didn't. Now the aerosol fillers and/or marketers have a serious problem on their hands, serious for the company already cited and for those who may be cited later.

* * * * *

CLAIMS . . . . Within the past few years, several of our largest maunfacturers and marketers of soaps and specialties have entered the household insecticide field. Recently we had occasion to check some of their advertising and label claims and we find, — to put it rather mildly, — that said claims are a trifle enthusiastic. Perhaps they do have the greatest faith in their products, but we fear that the Department of Agriculture and some of our state law enforcement agencies may not share this great faith.

Where insecticides are concerned, we find enforcement officials coldly factual. Label and advertising claims for a cleaning compound, a wax polish, a scouring powder, a glass cleaner

For Your Polyethylene Packaged Cosmetics

Tested Custom-Built Fragrances

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may be one thing; insecticide claims are another. Then again, the Federal Trade Commission may step into the picture. And FTC never hesitates to joust with a large and powerful outfit.

Some of these sweeping label and advertising claims for certain household insecticides we lay to the fact that their marketers are relatively new in a peculiar and highly specialized business. We seem to sense their need of more expert guidance.

* * * * *

INSECTICIDES . . . . One of our oldest and best known marketers of household insecticides is currently playing two instruments in the same band. The company is selling a pint of household liquid plus a sprayer which attaches to the can for 69 cents retail. They also are offering an aerosol insecticide in the standard can at $1.39 retail. Both are being backed up with plenty of newspaper advertising. Both are excellent products. Both bear the same well-known brand name.

And here we see fuel for a big merchandising argument. Does the low price for the liquid make the aerosol look like an expensive luxury at double the price? Or does the price of the aerosol make the liquid look like a Cheap John product that the manufacturer is trying to get rid of at a cut price? Probably could be either or both. Maybe a lot depends on how much money the prospective buyer has in his jeans at the moment of purchase.

The company is no slouch as a merchandiser. Possibly it figures to hook both ends of the market, the quality buyer and the price buyer. But the idea sort of left us a bit puzzled.

* * * * *

EDUCATE 'EM . . . . Another recent meeting of the American Medical Association again took up the problem of accidental poisoning by household chemicals. Inasmuch as children are the main victims of such accidents, their protection naturally received the greatest attention. And the meeting concluded that education of parents is the key to the solution of the problem, education through their doctors.

Well we know that AMA swings a big oar in public relations in this country, some times we fear too big an oar. But this educational problem is bigger than AMA and the doctors. Its solution calls for close and active cooperation with industry. It calls for close cooperation with all the chemical trade associations as well as state and federal officials. AMA simply can't do it alone. Careless parents we shall always have with us. The main hope is to reduce their number.

We still feel that any degree of success in educating parents and others must come from a concerted effort, the combined effort of doctors, industry, public officials and the press of the country.

* * * * *

SOAP WORKERS . . . . Only 42 per cent of the products manufactured and shipped by soapers in 1954 were soap and glycerine, according to the Bureau of the Census. Not too many years ago, this figure was about double what it is today, emphasizing once again the great inroads which synthetic detergents have made into the market. To a lesser degree, other diversification by soapers has further reduced the proportion of soap and glycerine shipments. It seems that soapers are no longer primarily soapers. All of which is old hat to the soap industry.

Most significant to us in the census figures for 1954 was the wide improvement in the position of labor in the soap industry. Workers in the industry earned 18 per cent more money in 1954 than in 1947 with their numbers down 19 per cent and man-hours down 29 per cent. In short, workers in the soap industry earned $68,000,000 in 1954 as against $57,400,000 in 1947 for 29 per cent fewer hours worked, an overall increase in wages of 35 to 40 per cent in seven years. As far as labor relations are concerned, we feel the figures tell their own story and that further comment would be superfluous.

You'd have to go a long way to find these properties

...so specify

NOPCO HYONICS

HYONIC PE 250

(100% active nonionic alkyl aryl polyether alcohol)

Gives high, persistent foam

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Excellent wetting agent and emulsifier

Extremely stable in presence of acids, alkalis, inorganic salts including heavy metal salts

A powerful detergent

Suggested uses—dairy detergents and milkstone remover, car wash, antiseptic sanitizer, paint and woodwork cleaner

HYONIC FS

(100% active lauric acid alkylolamide condensate)

Superior foam stabilizer for anionics

Remarkable thickening action over a wide range of concentrations

Non-corrosive—can be stored indefinitely

Excellent detergent and wetter and shows remarkable synergism when blended with anionics or nonionics

Suggested uses—liquid dishwasher, clear liquid shampoo, bubble bath

No, it isn't necessary to explore the universe for your detergent aids since Nopco Hyonics will undoubtedly provide just exactly the properties you need and Nopco technical men will work right with you to help you produce detergents of your own specifications.

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as the reader sees it...

Dr. Freeman Replies

Editor:

I would like to comment on the letter of Drs. Brown and Phiper, which appeared in the July issue, concerning my recent paper appearing in *Soap and Chemical Specialties*. They are indeed correct in stating that I overlooked the elimination of the solvent separation step in their use of the Seil method. Although this fact invalidates my explanation for the divergencies between the Seil and Shukis methods reported by them, it is my belief that more concrete evidence is required to prove that the chrysanthemumic acid moiety is less stable than the cyclopentenolone grouping under their test conditions.

When conclusions are founded upon the lack of concordance between fundamentally different analytical procedures, it is essential that the effect of interferences be either eliminated or taken into account. To the best of my knowledge, the quantitative fate of the dimer and related products formed by irradiation of the pyrethrins is not known. At the present time there is no basis for one to assume that these materials behave in the same manner when analyzed by the above methods. It is known that the dimer and polymers formed display intense absorption in the region of the analytical wavelength selected by Shukis *et al*. An examination of the irradiated by-products is therefore necessary to compare the results of the analytical techniques properly. Only after this is done can an adequate evaluation of the results be undertaken.

Dr. S. H. Harper's statement (Proceedings of the International Congress of Crop Protection, 2nd Congress, London, 1949) with regard to Beckley's ultraviolet absorption procedure for determining pyrethrins is applicable to the modified one introduced by Shukis, viz., "as an absolute method it can only give a rough estimate of total pyrethrins and, moreover, could be vitiated by extraneous materials showing similar absorption, for the α, β-unsaturated carbonyl group is a fairly common feature of natural products."

Stanley K. Freeman,
Chief chemist
Benzol Products Co.
Newark, N. J.

★

Aerosol Patent Appeal

An appeal to the Supreme Court of the United States for a writ of certiorari was filed recently by Colgate-Palmolive Co., New York. The petition requests a hearing by the Supreme Court in the so-called "Rise" aerosol foam shave cream patent case. The validity of the "Rise" patent, held by Carter Products Company, New York, was unanimously upheld by the United States Court of Appeals, following a similar ruling by the U. S. Court of Appeals for the District of Maryland, at Baltimore. The Court of Appeals also held the patent infringed by Colgate and ruled that the defendant had misappropriated trade secrets. The court also upheld the lower court's awarding of damages.

The Colgate appeal to the Supreme Court alleges that the claims of the "Rise" patent "monopolize the products of an entire industry and were sustained in direct conflict with applicable decisions of this court." The appeal also declares that the patent is invalid and is anticipated by prior inventions.

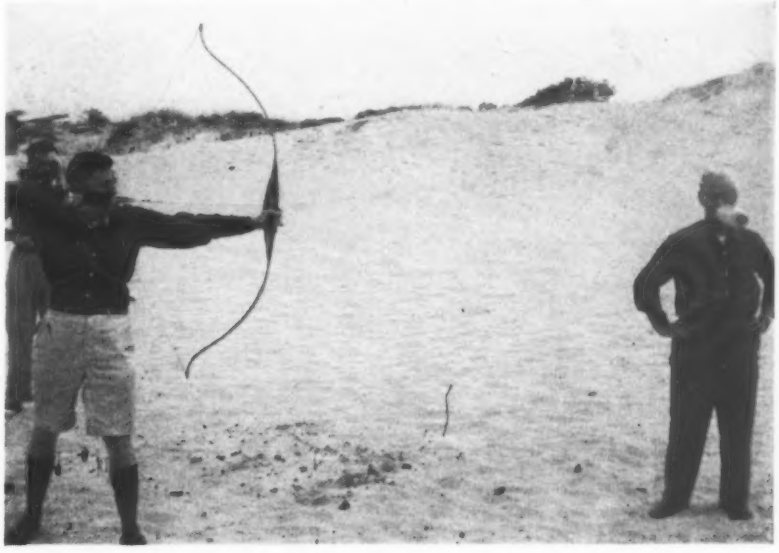
★

Robertet Names Heithaus

The appointment of Donald Heithaus as new midwestern representative for P. Robertet, Inc., and Taconic Natural Oils Co., both New York and Grasse, France manufacturers, importers and distributors of perfuming materials for soaps, cosmetics and perfumery, was announced recently. Mr. Heithaus was formerly associated with Procter & Gamble Co., Cincinnati.

Shades of William Tell

A feature of the recent outing of George T. Johnson Co., Medford, Mass., sanitary supply jobbing firm, was a demonstration of championship archery technique performed by Ed Belfry, New England representative of Pacific Coast Borax Co. Ed demonstrated how to knock off competition by puncturing a balloon held in the teeth of George Hall, sales representative of Voorhees-Tiebout, Red Hook, N. Y. manufacturer of soap dispensers.



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by Raymond

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PENDIT CA can be the answer wherever a cationic emulsifier or wetting agent of unvarying physical properties is required. It is successfully used as a fabric softener, textile lubricant, mould inhibitor and industrial deodorant. A stearyldimethylbenzylammonium chloride, it is stabilized against separation in the drum.

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Famous "window test" used in advertisements for Procter & Gamble's "Blue Cheer" detergent demonstrating use of optical bleaches.

Recent developments in

BRIGHTENING AGENTS

By H. W. Zussman, W. Lennon and W. Tobin*

Geigy Industrial Chemicals
Division of Geigy Chemical Corp.
Ardsley, New York

FLUORESCENT brightening agents are now used in most products, including toilet soap, blueing, bleaches, textile finishes, laundry sour and upholstery shampoo. Estimated volume this year may reach $6,000,000 — a small but critical fraction of the total value of detergent production.

Brighteners now occupy a relatively secure position in the detergent industry. Ten years ago, when they were first introduced into this country from Europe, there was considerable skepticism about their value in large part resulting from a misunderstanding of how these materials worked. The human eye is sensitive to a very narrow band of radiant energy, 400 to 800 mu; our eyes are not sensitive to ultraviolet or infrared light. As a result, we do not see all the light reflected by a perfectly white fabric irradiated with sunlight or some other light source containing an ultraviolet component. A fluorescent substance transforms ultraviolet to visible light. Hence, its application to a white fabric results in the reflection of more visible light and less ultraviolet light. To the human eye, the net effect is an increase in fabric whiteness although with no significant change in the total reflected radiation. If the fluorescence is blueish, it will compensate for or mask the natural yellowing tendency of textile fibers on ageing. This effect is no optical illusion; although the eye is exquisitely sensitive to the small but significant energy changes involved, these changes are also readily detectible by physical devices. The benefits

Use of brighteners in detergent products has heralded new phase in development of the soap industry. Now that the technical problems of soil removal have been solved, problem of upgrading fabrics may be faced.

*Paper presented before 42nd midyear meeting, Chemical Specialties Manufacturers Association, Chicago, May 21, 1956.

derived from the use of fluorescent dyes should not be confused with effects having nothing to do with the physical/psychological process noted. Brighteners make fabrics whiter and brighter; however, they are neither substitutes for good detergents nor apologies for poor ones. Actually, the full value of a brightener cannot be realized unless the basic detergent provides a clean substrate for the dye. Brighteners are not substitutes for chemical bleaches; they will not remove stains or odors, nor sanitize; brighteners do, however, very definitely augment or supplement the action of hypochlorite or peroxide.

Brightener costs in recent years have averaged about twenty cents per hundred pounds of finished detergent; on occasion – particularly when new detergents have been put onto the market – costs have gone as high as forty and fifty cents. It is doubtful that this amount of money could be better spent on present day detergents, which have already reached a high peak of efficiency as cleaning agents. In a cost conscious industry, this can only mean that the brightener sells the detergent to the consumer. It also follows that anything which sells detergents year after year must serve a rational, useful purpose, and represent something the consumer wants. The consumer appeal of brighteners is aptly illustrated by the tremendous emphasis on them in the advertising copy for many products in which they are used. That brighteners are more than a promotional trick is demonstrated, on the other hand, by the advertising copy of most detergent brands, which makes no mention at all of the very sizeable concentration of brightener present.

Brighteners More Varied

TODAY'S brightening agents are more varied and complicated chemically (Figure 1) but still lower in price than the products originally available to the detergent industry; having survived the ravages of time and competition, today's brighteners are also freer of defects. These products may be classified as four main types: (1) The "work horse" brightener, usually stilbene triazine derivatives (Figure 1a), where R is an aromatic or aliphatic group. These products are substantive to cotton and occasionally to nylon; stability to hypochlorite is limited; fluorescence value per dollar is very good. (2) The "all purpose" type, differing chemically but characterized by good substantivity to nylon and acetate as well as cellulose fibers and good chlorine stability so that bleach may be used in conjunction with the detergent if desired. (3) The coumarins (Figure 1b), substantive to nylon and acetate and usually of limited value on cellulose. These products have outstanding light stability in aqueous solution and are commonly used in liquid detergents bottled in clear glass. (4) The sulfones (Figure 1c): substantive to cellulose only, but with unusually good chlorine fastness; these products are especially preferred for use in powdered bleaches.

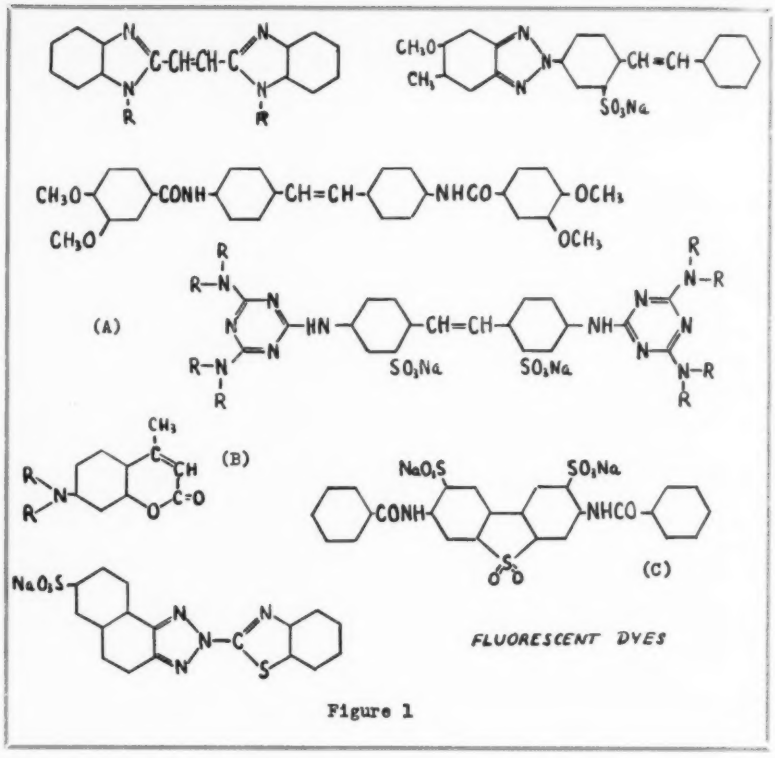


Figure 1

This by no means is an exhaustive classification. Research activity in the brightener field is intense. The six or seven commonly used brighteners actually represent the end product of synthesis and screening of literally thousands of compounds.

The evaluation of brighteners is not a difficult, but a time consuming, task. First, the formulator must decide what he wants to accomplish and what he needs to sell his product. How important, for example, is it to have a brightener which will benefit synthetic fibers as well as cotton? Consumption of synthetic fibers in the United States, including acetate but not rayon (which behaves essentially like cotton except for lower brightener affinity), is about ten percent of all fibers; cotton and rayon account for 83.5%, wool and silk for the rest. If one considers the so called white goods – bedsheets, towels, etc., – these are almost exclusively cotton. Synthetics, however, have made important inroads in shirting fabrics; acetate is used in men's sportswear and in women's wear. Specialties

such as nurses' uniforms as well as men's and women's underwear are using increasing amounts of synthetics. Traditionally, these are carefully inspected for workmanship in the laundry. Consequently, synthetics represent an important part of the household laundry, all out of proportion to their actual production. By contrast, the commercial laundry is probably less concerned with synthetics.

Of fourteen leading household detergents (Table 1), seven will brighten nylon and acetate as well as cotton and rayon; it is only a matter of time, probably, before the others will follow suit. (The fluorescence benefits obtained from Product 1 correspond to a brightener content of about 0.1%.) Commercial laundries so far seem to be satisfied with straight cotton brighteners. There are basically only two ways to get multi-fabric brightening. One way is to use a combination of cotton brightener with a synthetic fiber brightener. Until recently, this was the only way to handle the problem. Using a cotton brightener with a coumarin, for example, the latter is wasted if there is no synthetic fiber in the wash load; if there is no cotton in the load, then the stilbene brightener is wasted. With the introduction of "Tinopal"* RBS by Geigy, a product became available which would benefit straight cotton loads, straight synthetic loads or mixtures. This brightener has had widespread industry acceptance, although it is still commonly used with straight cotton brighteners such as "Tinopal" 4BM Conc.

Bleach Stability

HOW about bleach stability? Fabrics already treated with brightener may usually be soaked in hypochlorite bleach without danger of fluorescence loss. However, hypochlorite (but not peroxide) will attack many brighteners in solution. In the commercial laundry, bleach is invariably used after sudsing; hence, there is no problem here. The laundering habits of the housewife are highly varied. Manufacturers compound the confusion. One well known detergent brand cautions: ". . . To remove stubborn stains, put bleach in first rinse for best results." On the other hand, the directions for a top selling hypochlorite liquid bleach recommend: "Add one tablespoon (bleach) for each gallon water. Mix well. Add soap or detergent. Immerse laundry." A high percentage of housewives undoubtedly uses bleach in such a way that many brighteners will be adversely affected. Chlorine sensitive brighteners are much less expensive than chlorine fast brighteners, but if consumers insist on using bleach with detergent, one might well question the value of chlorine sensitive brighteners at any cost. Some formulators prefer to ignore this. Others have apparently decided that hypochlorite-compatibility is a must, while still others have compromised either by using mixtures of brighteners to get partial fastness, or by marketing differently formulated detergent products in the hope that each will reach its intended market. These are the sort of choices that the detergent formulator must make for himself; they are not technical problems but merchandising problems best settled by consumer market analysis techniques.

In some ways, the behavior of brighteners is almost as difficult to understand as the working habits of housewives. Brighteners are, fortunately, more susceptible to measurement. A satisfactory test procedure used in our laboratories consists of washing a load of four 5 gram 80 x 80 desized bleached cotton swatches for 20 minutes at 34 rpm with 2.4 grams detergent in 600 ml. water at 140°F. in 1100 ml. stainless steel launderometer tubes with 100 0.2" steel balls. The fabrics are rinsed manually in a brimful 4 liter beaker for 15 seconds with water flowing at 9 liters per minute at 110-120°F. The fabrics are extracted, then dried in a forced draught at ambient temperatures. During this entire operation it is important to exclude light as far as practicable by use of actinic glassware, light shielded equipment and darkrooms, or alternatively to maintain uniform lighting conditions. When testing for hypochlorite stability, the detergent solution and hypochlorite may be allowed to stand for 1, 2 or 10 minutes before adding the washload. Brightener concentration in the detergent may be varied from 0.01 to 0.1%. At the lower level, the concentration of the brightener based on the fabric is only 12 parts per million, but this is sufficient to detect noticeable benefits under ultraviolet light or in good daylight. It is important to incorporate the brightener in the detergent under conditions simulating plant formulation; the use of special dissolving techniques for highly insoluble brighteners often produces unrealistic results, especially if such products are drymixed in practice. Storage stability in liquid formulations and processing stability during slurrying, spray drying and recycling must also be considered.

Table 1. Brightening value of commercial household detergents (February, 1956) tested at 0.4% at 140°F.

	Percent Fluorescence	
	cotton	nylon
Product 1	92	38
Product 2	59	29
Product 3	55	26
Product 4	33	14
Product 5	61	27
Product 6	60	20
Product 7	33	9
Product 8	50	6
Product 9	63	25
Product 10	34	5
Product 11	3	3
Product 12	53	8
Product 13	52	6
Product 14	58	6

Visual Evaluation

FLUORESCENCE of laundered fabrics may be evaluated visually in diffuse daylight or with some uniform ultraviolet light source; several instruments are also available which will provide numerical ratings. The Lumetron has given satisfactory service in our

*Tinopal is a registered trademark of Geigy Chemical Corporation.

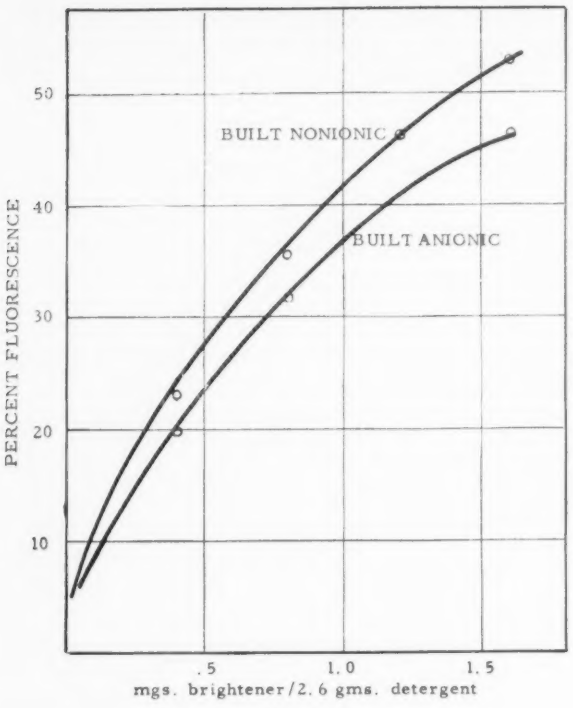


Figure 2

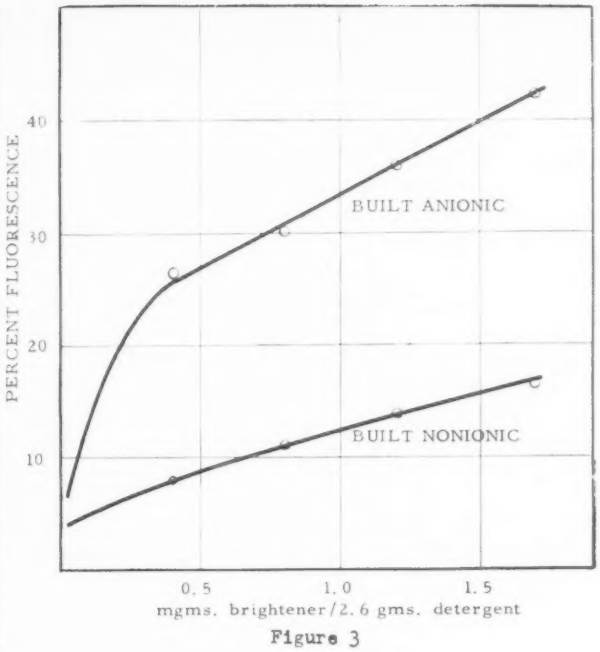


Figure 3

laboratories despite certain limitations. This machine irradiates a fabric sample with a 366 mu monochromatic light beam; the reflected light passes through a filter which removes the ultraviolet component and permits only the visible fluorescence to reach a photocell which reports gross fluorescence as percent brightness relative to a standard reference. The Lumetron supplies no information about hue; this important characteristic is most conveniently determined visually, or if elegance is required, with a spectrophotometer. As a rule, hue is best determined on a damp fabric.

Figures 2 and 3 compare the behavior of two very closely related triazinestilbene brighteners when applied to cotton from a built alkylaryl sulfonate detergent and from a built octylphenol polyethyleneoxide detergent. It is evident that detergent choice will have a very profound effect on brightener performance. Some nonionic detergents have less effect on brighteners than others. In some cases, chlorine stability as well as exhaustion characteristics are affected by formulation. "Tinopal" 4BM Conc. exhibits considerably improved hypochlorite fastness in built nonionics as compared with anionics.

Figure 4 illustrates the buildup of fluorescence on repeated washings with a brightener ("Tinopal" RBS 200) in a built alkylaryl sulfonate. After five washings, increase in brightness is negligible; after ten washes, the rate of desorption almost equals the rate of adsorption. Excessive buildup of brightener on the fabric is usually undesirable as it is not uncommonly associated with visible color formation rather than enhanced whiteness.

The rate of fluorescence buildup of "Tinopal" RBS 200 on cotton from a built detergent is depicted in Figure 5. Very rapid adsorption, which offhand might appear to be a desirable feature, more often causes uneven dyeing or splotchiness. Temperature is frequently, but not always, an important factor in controlling rate of brightener adsorption. "Tinopal" RBS 200 shows about the same rate of adsorption on cotton at 90°F. and 140°F. when applied from a built anionic; for this reason, along with its very even dyeing characteristics, this product is especially suited for cold water laundering or such special applications as lather cleaning of upholstery. On nylon, however, "Tinopal" RBS 200 shows the characteristic behavior of brighteners generally: faster and more complete exhaustion with increasing temperature. Hydrogen ion concentration also affects brightener performance. "Tinopal" RBS 200 shows improved exhaustion onto nylon with decreasing pH. Its adsorption on cotton is unaffected by pH; "Tinopal" RBS 200 may be used with laundry sour as well as with neutral or alkaline detergents. "Tinopal" 4BM Conc., which adsorbs well onto cotton from neutral and alkaline detergent baths, is unsatisfactory in laundry sours.

Once the brightener is on the fabric, it will still respond to its environment, chemical or physical. It is not sufficiently appreciated that fluorescence will vary with the moisture content of the fabric. In Table 2, the effect of relative humidity on some representative brighteners is noted. This sensitivity to moisture also shows up when fabrics are ironed;

Table 2. Effect of relative humidity on fluorescence of cotton

	0% RH	60% RH	100% RH
Product A	37.3	41.0	46.8
Product B	33.4	37.3	41.6
Product C	41.4	43.6	47.3
Product D	34.5	43.4	45.6

the regain of fluorescence is slow in some cases, in some cases rapid. High temperatures sometimes cause non-reversible fluorescence decreases, as in electric dryers.

Brightened fabrics respond to other influences in unpredictable ways. In one instance, it was noted that cotton which had been exposed to a coumarin brightener, yet showed no fluorescence, discolored badly on a subsequent hypochlorite bleach. Cationic softeners, which are being actively promoted as after-rinses in laundering, almost invariably have a detrimental effect on brightened fabrics, causing a decrease in fluorescence, although they do not interfere with brightener applied in subsequent laundering. Acidic materials such as laundry sour or the fumes of our industrial atmosphere have a quenching effect on many brighteners. These warnings are not meant to alarm, but simply to demonstrate the vigilance which must accompany the choice and use of specific brighteners.

As noted earlier, brighteners find applications outside of the detergent field. In the commercial laundry, for example, brighteners are usually used with silicofluoride or bifluoride sours. Table 3 offers some data on some commercial sours and brighteners.

Table 3. Brightening action of some laundry scours (0.1%)

		% Fluorescence
Commercial sour A		58%
Commercial sour B		65
Ammonium silicofluoride plus Tinopal RBS 200	0.25%	66
	0.50	82
Tinopal GS	0.50	50
Tinopal SP	0.50	56
Tinopal 4BM Conc	0.30	14

Commercial laundries are also being offered straight brightener diluted with salt to be used at any step desired and in whatever quantity required by the operator. Less than thirty percent of commercial laundries are believed to be using brighteners at present; this is probably a very fertile field for specialty brighteners.

Brighteners are also being used in household blueings. Many of the older, better known blueings now contain more fluorescent agent than blue color; some have undergone a complete change to specialty detergents.

Almost all of the powdered bleaches on the market contain brightener. The perborate bleaches, which are offered for synthetic fabric bleaching primarily, will generally contain all-purpose or nylon brighteners. The chlorinated preparations such as dichlorodimethylhydantoin and calcium hypochlorite/polyphosphate require a very high degree of chlorine resistance and principally cotton benefits.

Fluorescent dyes are also used to brighten soap and detergent products. Not all brighteners, by any means, are suitable for this purpose, some actually having a discoloring effect. "Tinopal" GS is used in white toilet soap at concentrations below 0.01% for no other purpose than to improve the

(*Turn to Page* 81)

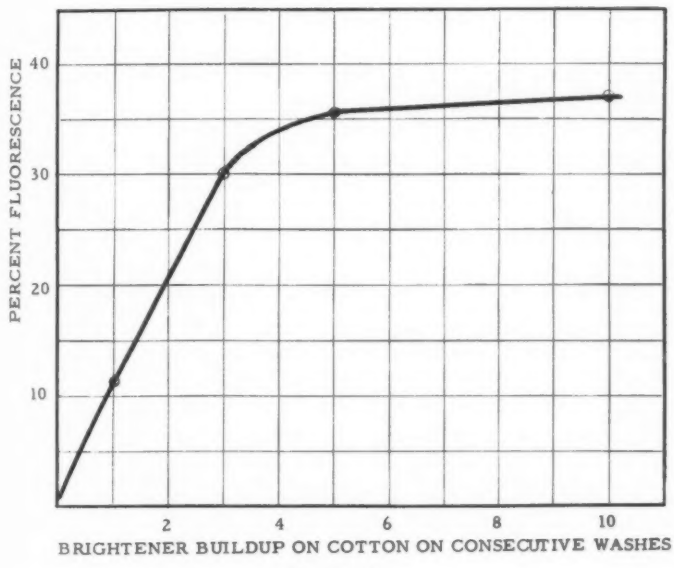


Figure 4

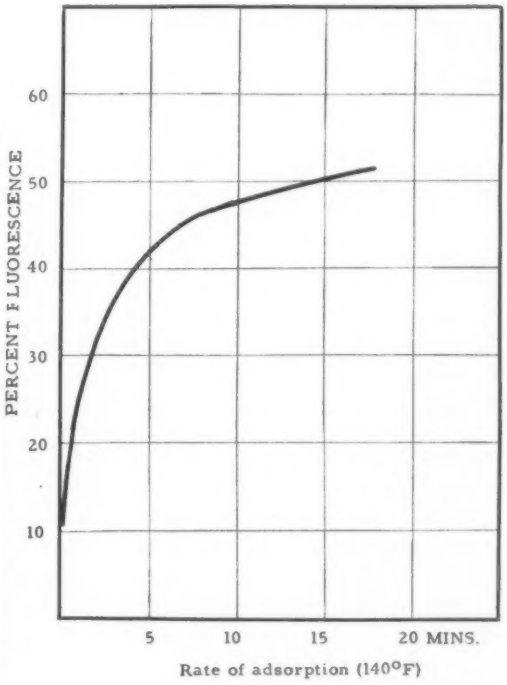


Figure 5

Practical Method of

Evaluating

SHAMPOOS are designed to clean the hair and scalp. In most instances, people associate the idea of abundant lather formation during this operation as a criterion of efficiency. Usually, if one uses a large enough quantity of any lathering shampoo product, one can obtain an abundant lather. Because this property of lathering seems to be important to users of shampoos today, our studies in this field have resulted in an *in vivo* method which gives duplicable results. Since, in addition to cleansing, a shampoo user desires a good appearance of the hair after the operation, lack of residues could contribute to that good appearance. An *in vitro* method was evolved to study this point and will be described.

Users of shampoos cannot evaluate lathering power of shampoos on the basis of a shampoo at home once or twice a week because the conditions and contamination can be so variable, nor can casual subjects be used in the laboratory. The amount of soil on the hair is one of the biggest variable factors. Hair dressings may be applied some times and not others. If these are oily, they will suppress lathering. Dirt, dust, and other air borne soil can soil a head of hair and suppress lathering. Recognizing these factors, we set out to standardize a method. At first, we attempted to classify the amount of lather produced by increasing weights of shampoo on standardized heads of hair. After more than 250 shampoos on men's heads of hair, the subject being his own control, we adopted the following procedure.

The subject shampoos initially to produce an abundant lather. After thorough rinsing and drying well with a towel, 2 ml. of a standard hair soil are pipetted onto the head and distributed by rubbing. When the hair is dry the subject is now ready to use the shampoo under test. (We used a hair soil composed of 20% anhydrous lanolin and 80% light mineral oil. The test method lends itself to the use of any type of soil or hair preparation).

The subject uses 0.25 gm. of the shampoo under test and attempts to work up a lather. The hair is wetted first and water added as needed. If no lather appears, additional 0.25 gm. portions of shampoo are applied and rubbed well in order to produce a lather until a permanent lather is produced. (In observing this shampooing technique, a slight build up of lather is frequently noticed which quickly fades. Hence, a permanent lather must be worked up.) The hair is rinsed and additional 0.25 gm. portions of shampoo used until an abundant lather is produced. This lather is rinsed off thoroughly, the hair dried with a towel, and 2 ml. of standard hair soil added to the head of hair and distributed by rubbing. The subject is set up to be used again on another product for comparison, and so on.

The method is essentially a titration of a standardized soiled head of hair with 0.25 gm. portions of shampoo to an end-point of a permanent lather. That is, a lather that remains for about a minute. The hair and scalp can be clean

Hair Shampoos

By W. G. Fredell and R. R. Read*
Lambert-Hudnut Division
Warner-Lambert Pharmaceutical Co.

A standardized method of evaluating lathering properties of shampoos is described. Variation in use-amounts due to type and volume of detergent.

at this point but because many people are sold on rinsing off the first lather and applying more shampoo to work up an abundant lather, the test method continues with this operation. (This entire shampoo operation only takes about seven minutes.) Table I shows some typical results of this method. The subject need not know which product is being used as a technician weighs out the 0.25 gm. samples of shampoo on cellophane weighing papers and applies them to the head. Two or three observers, including the subject looking into a mirror concur on the lather produced. The subject usually shampoos in the same manner each time. Different subjects have different techniques, hence he is used as his own control.

With respect to residues remaining on the hair after a sampoo, a simple *in vitro* test has given some rather startling results. Swatches of about 100 hairs six inches long were taken from women who had relatively recent beauty shop permanents. By selecting a swatch from one area representing a uniform curl which had, no doubt, been rolled on the same curler during the waving process, we felt that we had uniform samples of hair. The hairs from a swatch were individually mounted, scalp end only, and arranged in groups of 10 hairs each and spaced along an applicator stick as shown on the following page.

Shampooing was carried out on four or five groups of 10 hairs each simultaneously by dipping them repeatedly in two percent solutions or different shampoos contained in four ounce jars as illustrated.

The operator using an up and down motion washed the groups of hair for two minutes in the respective shampoo solutions which had been stored in a 37.5°C oven prior to use. After the shampoo treatment, the groups of hair were rinsed twice for one minute each in separate jars of water, also warmed by storage in the oven. Then, matting and tangling were straightened out using the end of an applicator stick.

*Paper presented before the Scientific Section of the Toilet Goods Association's 21st annual meeting, May 17, 1956, New York. Reprinted from the *Proceedings of the Scientific Section* of the Toilet Goods Assn.

Table I. Typical Shampoo Test Results

Subject	Product	Amount of Shampoo Used in Grams: Before Rinse	After Rinse	Total
201	A	0.75	0.5	1.25
	A	0.5	0.5	1.0
	B	0.75	0.5	1.25
	B	0.75	0.5	1.25
	C	1.0	0.5	1.5
	D	0.75	0.75	1.5
	E	0.75	0.5	1.25
	F	0.75	0.5	1.25
	G	0.75	0.5	1.25
203	A	1.0	0.5	1.5
	B	1.0	1.0	2.0
	D	2.5	0.75	3.25
	E	1.5	0.75	2.25
205	A	0.75	0.5	1.25
	A	0.75	0.25	1.0
	B	1.75	0.75	2.5
	B	1.5	0.5	2.0
	C	1.0	0.5	1.5
207	A	0.5	0.5	1.0
	C	1.0	1.0	2.0
	D	1.0	1.0	2.0

A, B, and C are commercial cream shampoos
D and E are commercial liquid shampoos
F and G are detergent only products containing the same concentration of detergent as Shampoo A but F buffered to a pH of 9 and G to a pH of 4.
To illustrate the relationship of soil to amount of shampoo required, a subject applied 5 cc. of the hair soil. The results obtained using 1 gm. portions of shampoo C were as follows:
1st application of 1 gm.—no lather
2nd application of 1 gm.—no lather
3rd application of 1 gm.—no lather
4th application of 1 gm.—no lather
5th application of 1 gm.—sparse lather—fading
6th application of 1 gm.—medium lather
7th application of 1 gm.—abundant lather

Table II. Film Residues of Various Shampoos on Dark Brown Hair

OK — No film or coating
SIF — Slight film or coating
F — Film or coating

Stick No.	Product	Washings 1st	2nd	3rd	8th
Tap Water					
1	A	OK	OK		
1	I	SIF	F		
1	J	OK	F		
1	K	SIF	F		
2	C	SIF	F		
2	A	OK	OK		
2	L	OK	OK		
2	B	SIF	F		
3	E	OK	OK	OK	SIF
3	M	SIF	SIF	F	F
3	A	OK	OK	OK	OK
3	N	OK	SIF	F	F
4	O	OK	OK	OK	OK
4	P	OK	OK	OK	OK
4	Q	OK	OK	OK	OK
4	A	OK	OK	OK	OK
6	E	OK	OK	OK	
6	C	SIF	F	F	
6	A	OK	OK	OK	
6	R	OK	OK	OK	
6	S	OK	OK	OK	
Distilled Water					
5	E	OK	OK	OK	
5	C	OK	SIF	SIF	
5	A	OK	OK	OK	
5	R	OK	OK	OK	
5	S	OK	OK	OK	

(An applicator stick was used to disentangle the hairs because a comb was found to pull matted hair too much and could dislodge residues deposited on the hair.) The groups of hair were hung up to dry and then observed with the naked eye for residues. Results of testing a number of shampoos are given in Table II.

Conclusions

A METHOD of determing lathering properties of shampoos on men's heads has been presented and variations in amounts used noted. This variation can be due to the amount and type of detergent present. Relative lathering power can be determined.

Actually the residue left on hair by this test method may be removed in *in vivo* shampooing by drying with a towel or in the combing or brushing process. It is of interest, however, to note some shampoos do leave residues.

★

Am. Potash Names Two

American Potash & Chemical Corp., Los Angeles, announced recently the appointment of Daniel S. Dinsmoor as vice-president in charge of planning and development and of Joseph C. Schumacher as vice-president in charge of research. Mr. Dinsmoor had previously been vice-president in charge of research and development. Before joining American Potash in 1948 he had been associated with the Merrimac Division of Monsanto Chemical Co.

Mr. Schumacher went with American Potash in 1954. From 1941 to 1954 he was with Western Electrochemical Co. and prior to that with Carus Chemical Co.

★

P&G to Borrow

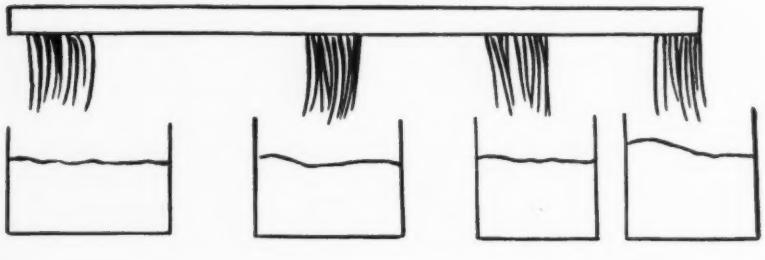
Plans to negotiate the borrowing of $70,000,000, probably through a public offer of 25-year debentures sometime after Labor Day, were announced by Procter & Gamble Co., Cincinnati, July 16.

According to Neil McElroy, president of P&G, in a letter to shareholders, the action has the concurrence of the company's board of directors. Procter & Gamble's business, Mr. McElroy said, is increasing at a "sound but rather rapid pace in keeping with the growth of our country," and this growth requires substantial increases in company capital. "The increase of our business has accelerated with the rapid advance in this country's population and its economy so that the company is no longer able to provide its capital needs and still distribute a reasonable share of corporate earnings to its shareholders," Mr. McElroy said.

The major part of the new money will be needed to build and equip the plant, acquire woodland and provide working capital for the previously announced expansion of the company's chemical pulp plant at Foley, Fla. The balance of the money, Mr. McElroy said, will be used for capital investment needed for the expanding soap and detergent, toiletries and food products divisions of the company.

In his letter to the shareholders, Mr. McElroy pointed out that "A business which is increasing in a sound, orderly way is what we are striving for and we believe it is what we are achieving. The additional capital to be obtained by the issuance of 25-year debentures will permit a realization of this desired development."

Applicator stick used to disentangle hairs, used instead of comb.



Fragrance Stability in Aerosols

By Herbert G. Kainik*
Dodge & Olcott, Inc.
New York

THE experiments which follow were conducted in compliance with requests from several sources and it is hoped that the accumulated data will illustrate the importance of thoroughly testing, in a specific aerosol medium, perfume fragrances which are being considered for use in aerosol products.

Since environment is all important in any tests concerning stability it is essential at this point to indicate the specific environment in which the perfume fragrances were tested.

A spray aerosol formula composed of four percent perfume fragrance, 36 percent anhydrous alcohol and 60 percent propellant was used to run the experiments. The propellant consisted of a fifty-fifty mixture of propellants 11 and 12. All test samples were filled in six-ounce containers of one pound tin plate, without lacquer linings.

Preliminary tests to establish fragrance miscibility were run by incorporating the fragrances in the spray aerosol and storing the finished aerosols in glass pressure flasks for one month at room temperature. No attempt was made to select test fragrances on the basis of miscibility or stability of their raw materials in the test propellant.

On this basis, 30 spray aerosols, representing perfume fragrances of known miscibility, were prepared in duplicate, filled in the test containers and stored prone for six weeks at room temperature and at 110°F. Several controls, consisting of anhydrous alcohol and propellant only, were also prepared

*Paper presented at 42nd midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 22, 1956.

and stored according to the conditions outlined.

The accompanying chart is a record of our findings for 13 of the 30 fragrances tested. pH readings were recorded for the controls and test samples after evaporation of the propellant, and for the perfume/alcohol solutions. These readings, taken at 23°C., appear in the first three columns. The fourth column indicates the increase in acidity, ranging from 1.20 to 4.00, of the samples tested at 110°F.

The fifth and sixth columns under the heading "Odor Evaluation" indicate the stability of the fragrances after six weeks storage at room temperature and at 110°F. Fresh aerosols were prepared and used as controls for this evaluation, which was made olfactorily by our perfume staff.

The final two columns are concerned with corrosion and indicate the internal condition of the test containers.

The chart has three additional columns which show pressure recordings but we do not intend to discuss these since we cannot vouch for their accuracy.

According to the Fragrance Stability Chart, the first seven fragrances remained stable although experiencing an increase in acidity ranging from 1.20 to 2.60. Beyond this figure the next three fragrances stored at room temperature remained stable, but their counterparts which were stored at elevated temperature showed evidence of odor change. The indication, therefore, seems to be that fra-

FRAGRANCE STABILITY DATA CHART

FRAGRANCE TYPE	pH at 23° C				ODOR EVALUATION AT 6 WEEKS		CORROSION DATA AT 6 WEEKS		PRESSURE - P.S.I.G.		
	6 Weeks Room Temp.	Perfume Alcohol Controls	6 Weeks 110° F.	Increase in Acidity	Room Temp.	110° F.	Room Temp.	110° F.	Before Storage Room Temp.	After 6 Weeks Room Temp.	110° F.
Aldehydic Floral		5.60	4.40	1.20	Stable	Stable	None	None			
Gardenia	5.20	6.30	4.66	1.62	"	"	"	Very Slight	36 lbs.	42 lbs.	
Lilac		5.40	3.60	1.80	"	"	"	None	34 "	37 "	36 lbs.
Medium Heavy Floral		5.00	2.90	2.10	"	"	"	Moderate			
" " "	4.70	6.10	3.75	2.35	"	"	"	Slight	39 "	39 "	
Woody Floral	5.20	5.60	3.00	2.60	"	"	"	None	39 "	36 "	
Gardenia	2.50	6.10	3.50	2.60	"	"	"	"	40 "	46 "	
Aldehydic Floral Woody Complex	4.70	5.90	3.25	2.65	"	Borderline	"	"	38 "	33 "	
Muguet		5.80	2.70	3.10	"	Definite Change	"	Pronounced	39 "	38 "	38 "
Spicey Jasmin	4.00	5.70	2.30	3.40	"	Borderline	"	None	35 "	36 "	
Lilac		5.50	2.00	3.50	Slight Change	Definite Change	"	"	37 "	37 "	30 "
Light Floral		5.70	2.10	3.60	Stable	Stable	"	Very Slight	36 "	37 "	38 "
Jasmin		5.90	1.80	4.00	Slight Change	Definite Change	"	" "	37 "	32 "	34 "

grances incorporated in the specified environment may suffer increase of acidity within certain limits while suffering no odor change or breakdown. Although odor change tends to occur beyond these limits the chart shows one deviate, namely, Light Floral. This fragrance remained stable under the specified conditions although increasing in acidity by 3.60.

Although the water content in the fluorinated hydrocarbon propellants is so low that pH does not apply, a different situation exists when perfume oil and alcohol, even though anhydrous, are introduced. Almost all perfume oils are composed of aromatic chemicals and essential oils. In the first group, condensation reactions involving aldehydes and esters, and certain esters and alcohols, yield water. Essential oils, the second group, frequently contain up to one percent moisture. These factors conspire to increase the water content in the system. Many of us are probably familiar with the cycle which involves hydrolysis of the propellant in the presence of the water, with the resulting formation of hydrochloric acid which in turn attacks the perfume oil. This cycle is accelerated at elevated temperatures. Our experience has shown that the use of rectified essential oils, from which the moisture has been removed, aids materially in maintaining fragrance stability in the specified system.

Corrosion and Fragrance Breakdown

WE have observed that a difference of opinion exists concerning the causative factors involving corrosion and fragrance breakdown. For example, some sources are convinced that corrosion in the container is the cause of fragrance breakdown.

Examination of the containers in which the alcohol/propellant controls were stored showed evidence of corrosion after two weeks storage at elevated temperature. At six weeks the degree of corrosion had increased proportionately. However, reference to the chart shows the first seven fragrances to be stable although three of the test containers indicated corrosion ranging from very slight to moderate. In the last group, the containers for the two borderline fragrances showed no evidence of corrosion. Muguet, which shows definite odor change and pronounced corrosion, also experienced fragrance breakdown when stored under identical conditions but filled in glass, indicating that here corrosion was not responsible for fragrance breakdown.

Admittedly, the test period was not unduly long and it is possible therefore that the passage of time would yield results which would call for some adjustments on the chart. Our own opinion concerning corrosion and fragrance breakdown, formed after reference to our laboratory files, is that fragrance breakdown is not necessarily accompanied by corrosion and, inversely, corrosion is not necessarily accompanied by fragrance breakdown.

The test formula is one which was considered primarily for packaging in cans as a spray cologne and the perfume content is quite high. The formula may, however, be varied to formulate hair lacquers antiperspirants, personal deodorants and room sprays, in which products the perfume concentration is usually much lower.

However, any situation which involves the incorporation of one or more components in the perfume/alcohol/propellant system once again raises the question of fragrance stability. Additional tests are required to prove conclusively that the fragrance is not affected by the new additives and also that the fragrance does not react with or impair the function of the additives.

For example, many perfume fragrances discolor in the presence of hexachlorophene. Some perfume fragrances affect the phenol coefficients of certain quaternary ammonium compounds and these products in turn deleteriously affect many perfume fragrances. Since the products mentioned are germicides which are frequently used in spray antiperspirants and personal deodorants to provide germicidal action, it is of prime importance to select fragrances which will not only add sales appeal but which will also not reduce the efficiency of these important components.

Certain perfume fragrances which have proved stable in the alcohol/propellant system may break down in the presence of aluminum salts or may affect the acidity of spray antiperspirants which are based on these salts.

In conclusion, and to repeat our original remarks, we cannot emphasize too strongly the advisability of testing perfume fragrances in specific environments.

—★—

Fragrance Group to Meet

The Fragrance Foundation will hold its seventh annual meeting on Sept. 20 at the Savoy Plaza Hotel, New York. The morning's program includes a business meeting open to members only, followed by an open meeting. The latter will hear a progress report of the results of the television advertising campaign conducted in three test cities (Columbus, Denver, and Richmond) and a talk by Roger Pryor, vice-president in charge of radio and television for Foote, Cone & Belding. Following a cocktail reception at 12 noon, luncheon will be served at 12:30. There is no registration fee. Luncheon tickets are $10 each.

—★—

Aerosol Story on TV

"Push-Button Living," General Chemical Division's motion picture story of aerosols, was shown recently on the NBC television program, "Home Show." The feature showed virtually every type of pressure propelled product currently on the market and included a demonstration of the principle of pressure packaging and the making of a foam shave cream by pressure filling. General Chemical Division of Allied Chemical & Dye Corp., New York, makes "Genetron" fluorinated hydrocarbon propellants.

Properties of

Lauryl Ether Sulfates

By George Braude, Richard R. Egan, Morris Warren and Leo Galitzin†

American Alcolac Corp.
Baltimore, Md.

LAURYL sulfates are among the best known and most widely used anionic surfactants. It was, therefore, of interest to determine the effect of introducing an increasing number of ether groups, derived from ethylene oxide, into their molecule.

These ether chains, if combined with a hydrophobic group such as a long chain alkyl, aryl, or alkyl-aryl radical, are the basis of a large number of nonionic surface active agents, some of considerable interest.

Sulfation of the terminal –OH group of some of these ether-alcohols can be accomplished by the reactions shown below for sodium lauryl ether sulfate:

Ethoxylation

$$CH_3(CH_2)_{10}CH_2OH + n\,CH_2\!\!\diagdown\!\!\diagup\!\!CH_2 \longrightarrow CH_3(CH_2)_{10}CH_2-(OCH_2CH_2)_nOH$$
(O)

Sulfation

$$CH_3(CH_2)_{10}CH_2-(OCH_2CH_2)_nOH + HSO_3Cl \longrightarrow CH_3(CH_2)_{10}CH_2-(OCH_2CH_2)_nOSO_3H + HCl$$

Neutralization

$$CH_3(CH_2)_{10}CH_2-(OCH_2CH_2)_nOSO_3H + NaOH \longrightarrow CH_3(CH_2)_{10}CH_2-(OCH_2CH_2)_nOSO_3Na + H_2O$$

These compounds have been described before, but little is known about their properties.

According to an I. G. Farben patent (1), issued in 1934, higher alcohols containing 50% dodecanol can be reacted with ethylene oxide and the resulting ether-alcohol sulfated with chlorosulfonic acid to yield surface active agents of improved wetting properties.

Dodecyl triethylene glycol ether is, according to a British patent (2), subjected to the action of sulfonating (= sulfating) or phosphating agents to yield wetting agents.

Liquid surface active agent compositions are claimed in a French patent assigned to Sinnova (3): one mole of lauryl alcohol is reacted with 2–½ moles of ethylene oxide, then sulfated and the lauryl ether sulfuric ester finally neutralized with ammonia or magnesium hydroxide solution.

The objective of this work was:

1. To determine the influence of an increasing ether (= ethylene oxide) chain length on the properties of lauryl-ether-sulfates.
2. To evaluate the general properties of sodium lauryl ether sulfate solutions, containing three to four ether groups.

The length and importance of the hydrophilic portion of the molecule increases, of course, with each additional ether group. A change in the hydrophilic-hydrophobic balance will naturally result in a change in physical properties in pure state as well as in aqueous solution.

Samples ranging from n=O (= lauryl-sulfate) to n=6 (=6 ethylene oxide = ether groups) in lauryl-ether-sulfate were prepared from technical grade lauryl alcohol and evaluated.

General Properties

PURE sodium lauryl sulfate (n=O) is a white, crystalline solid. Pure sodium lauryl ether sulfates tend to become amorphous semi-solids as the chain length increases. Solutions containing 30% sodium lauryl ether sulfates are sparkling clear liquids at room temperature.*

Other salts of lauryl ether sulfuric acid have also been prepared, namely, the potassium, ammonium, calcium, magnesium, and triethanolamine derivatives. They all give clear, free flowing, aqueous solutions at approximately 30% concentration.**

The primary objective here is a comparison of the properties of various sodium lauryl ether sulfates.

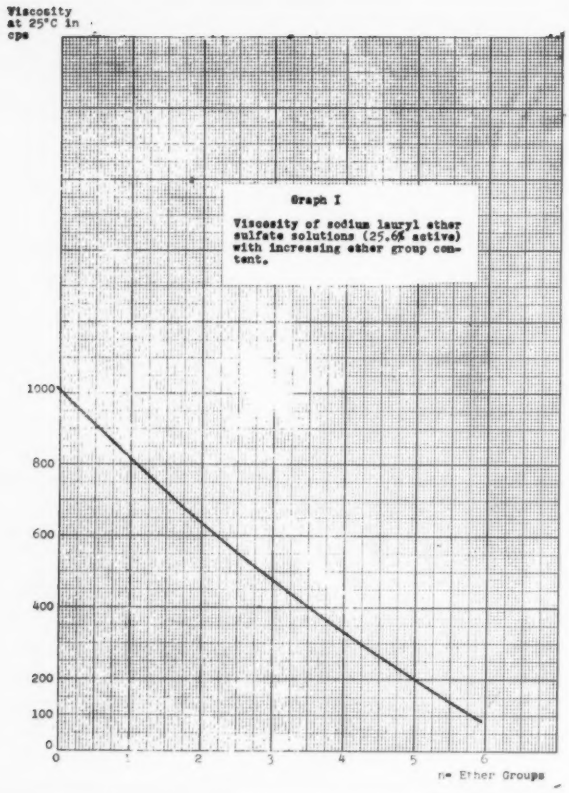
Viscosity

THE viscosity of an aqueous solution of sodium lauryl ether sulfate decreases rapidly with increasing ether chain length, as shown in Graph I. A 28% active solution was selected for evaluating the influence of several other additives on viscosity.

† Paper presented during 42nd midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 21, 1956.

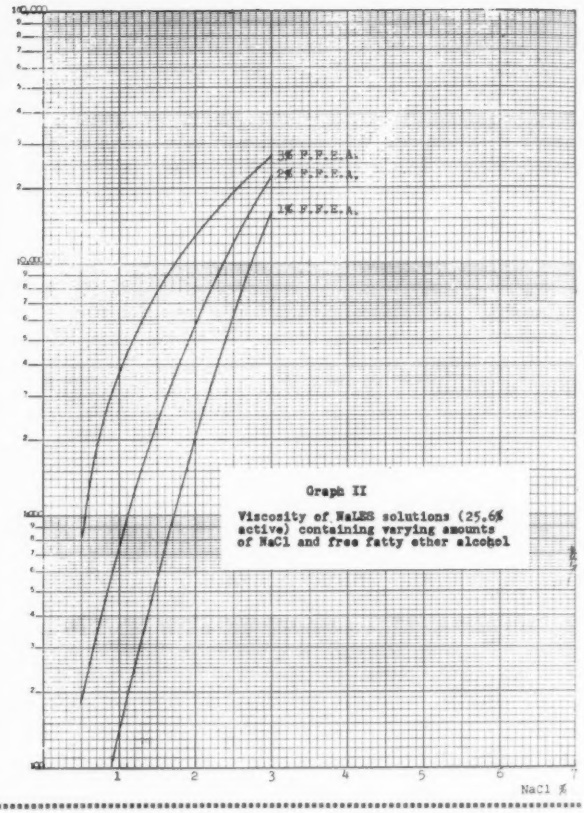
* Commercially available as "SIPON ES," American Alcolac Corp., Baltimore, Md.

** The properties of these salts will be the subject of a future publication.



Graph I

Viscosity of sodium lauryl ether sulfate solutions (25.6% active) with increasing ether group content.



Graph II

Viscosity of NaLES solutions (25.6% active) containing varying amounts of NaCl and free fatty ether alcohol

The relationship of viscosity with increasing sodium chloride and free ether alcohol content was determined. Table I and Graph II show the results of these tests. It will be noted that the viscosity can be readily controlled by careful addition of NaCl or lauryl ether alcohol or both materials.

The range of NaCl and lauryl ether alcohol, in the above tests, was held on the low side deliberately. Another series of experiments was set up to determine the effects of these two additives in high concentration.

A 20% active sodium lauryl ether sulfate solution was used for the NaCl study. It will be noted in Graph III and Table II that when 7% of solid NaCl was introduced into the solution a peak in the viscosity curve was attained. Further addition of NaCl lowered the viscosity significantly. When 8.5% NaCl had been added the viscosity dropped sharply but the solution remained crystal clear and showed no tendency to separate or salt out. At 20% NaCl concentration, the solution broke. The exact separation point has not yet been determined precisely.

Table I. Viscosity of NaLES solutions (25.6% active) containing varying amounts of NaCl and free fatty ether alcohol

	Free Fatty Ether Alcohol		
NaCl	**1%**	**2%**	**3%**
0.5%	48	180	820
1.0%	150		
1.5%	560	2400	7800
2.0%	1800		
2.5%	6500		
3.0%	16000	22500	26500

These solutions are thus exceptionally stable to the addition of salt, due presumably to the more hydrophilic nature of the ether sulfates.

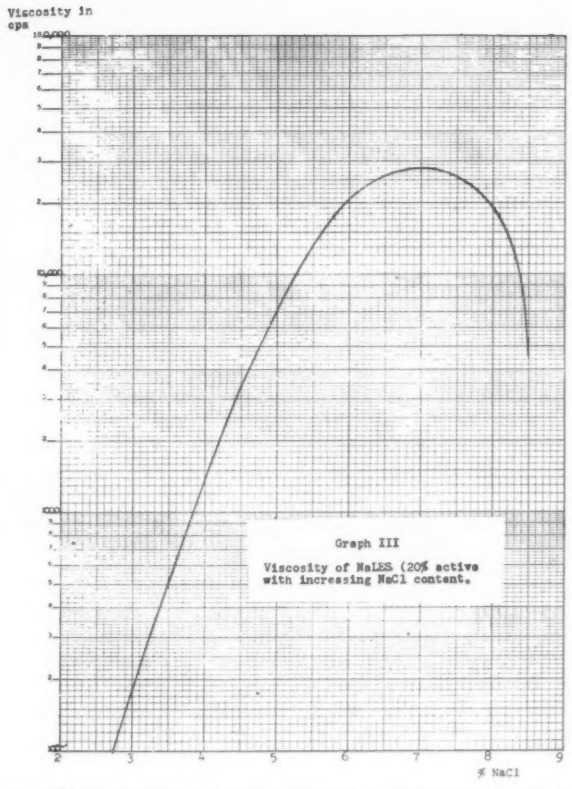
A similar effect can be observed when unsulfated (free) lauryl ether alcohol (abrev. F.L.E.A.) is added to sodium lauryl ether sulfate solutions. Due again to the solubilizing effect of the ether groups in the lauryl ether alcohol, it is possible to add about 50% F.L.E.A., based on the weight of sodium lauryl ether sulfates present, before separation takes place.

Table III and Graph IV show the viscosities of these various solutions. The viscosity increases up to about 25% free ether alcohol content, but then drops significantly. The solutions, however, remain clear.

The dotted line in this graph covers an area of very pronounced thixotropy not observed

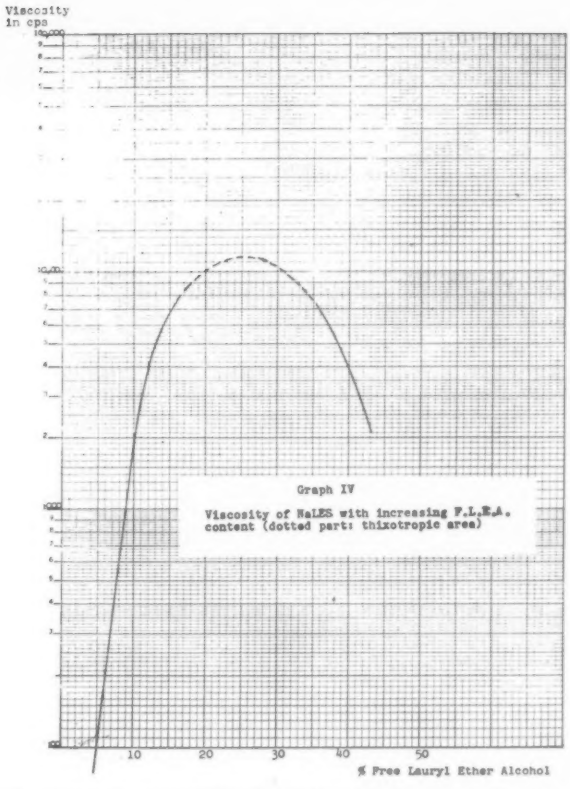
Table II. Viscosity of sodium lauryl ether sulfate solution with increasing NaCl content

NaCl Content in % (NaLES 20% active)	1	2	4	5.5	7	8.5	20
Viscosity at 25°C in centipoises	6	19	1,450	12,900	28,100	4,460	(salted out)



Graph III

Viscosity of NaLES (20% active with increasing NaCl content.



Graph IV

Viscosity of NaLES with increasing F.L.E.A. content (dotted part: thixotropic area)

in other portions of the curve.

Concentration changes in sodium lauryl ether sulfate solutions affect the viscosity to a very substantial degree, as evidenced by Graph V.

A very sharp decrease in viscosity from an initial high value due to the presence of 5% NaCl is obtained by progressive dilution of a sodium lauryl ether sulfate solution. (See Graph VI.)

Graph VII shows that increasing temperature lowers the viscosity of solutions of sodium lauryl ether sulfate. The material used contained an activity of 28%, 0.5% NaCl and 2% lauryl ether alcohol.

Viscosity characteristics with temperature were also studied on solutions 25% active in sodium lauryl ether sulfate, one containing 5% NaCl and 1% lauryl ether alcohol, and one containing 0.5% NaCl and 4% lauryl ether alcohol. Both solutions show a characteristic viscosity lowering with increasing temperature as seen in Graph VIII.

Cloud Points, Solubility

THE increase in the length of the ether chain results, as mentioned above, in a change of the hydrophilic-hydrophobic balance of the molecule and its solubility characteristics in polar solvents.

Graph IX shows the cloud point temperature for sodium lauryl sulfate and sodium lauryl ether sulfate solutions (25.6% active) of increasing ether chain length. The substantial lowerings noted confirm expectations.

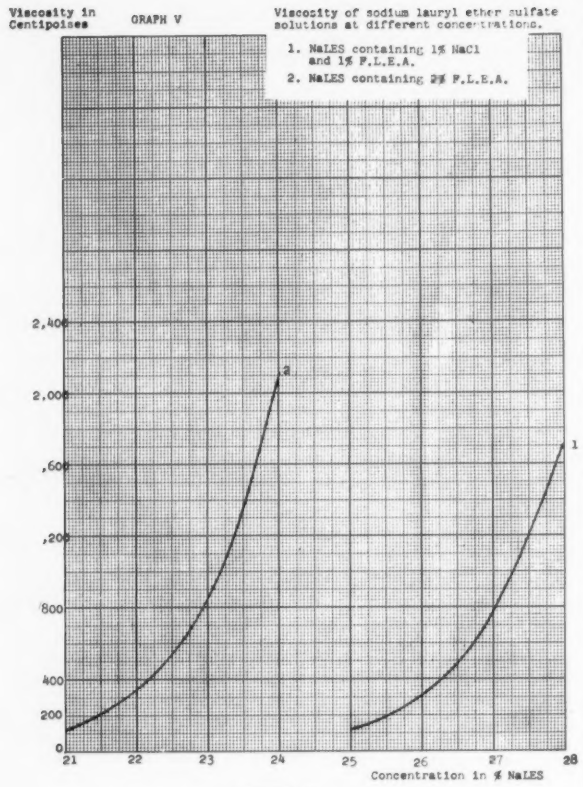
Table III. Viscosity of sodium lauryl ether sulfate solutions (24.5% active) with increasing F.L.E.A. content

% F.L.E.A. (based on NaLES present)	4	8	16	25	35.7	43.3	62
Viscosity in centipoises at 25°C	80	620	7,530	10,000+ (very thixotropic)	7,120	2,100	(two layers are formed)

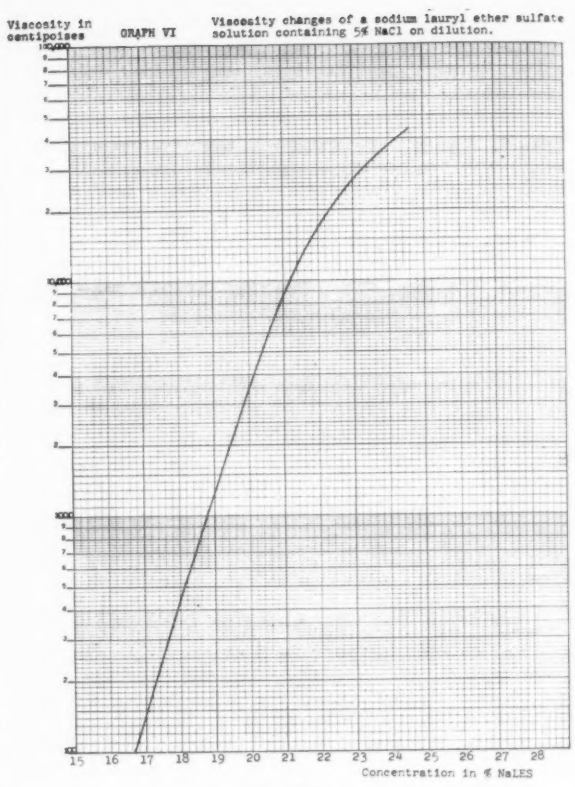
Surface Tension

SURFACE tension and interfacial tensions against mineral oil data is given in Table IV and in Graphs X and XI. Column 1, in Table IV, represents lauryl ether sulfate, having an activity of 30%, 0.5% NaCl and 1.0% lauryl ether alcohol. Column 2 is standard lauryl sulfate. Column 3 is the same material as in Column 1 but containing 3% lauryl ether alcohol. Column 4 is a typical nonionic ethylene oxide derivative derived from tallow alcohol. The effect of the ethylene oxide in the "Sipon ES" molecule is notably reflected in the surface tension and interfacial tension characteristics of these dilute solutions. These characteristics are more similar to those of a typical nonionic detergent derived from a fatty alcohol than a sulfated lauryl alcohol.

Increasing ether chain length affects the foaming power of so-

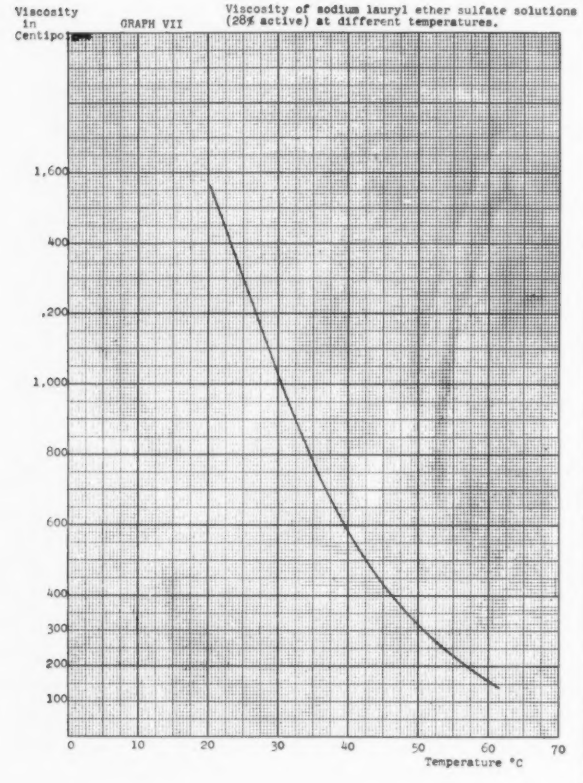


Graph V

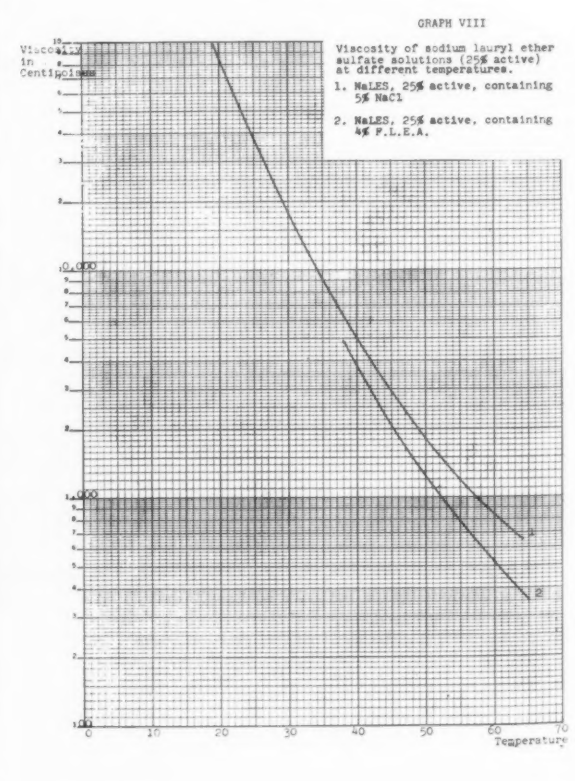

Viscosity in centipoises
GRAPH VI
Viscosity changes of a sodium lauryl ether sulfate solution containing 5% NaCl on dilution.
15 16 17 18 19 20 21 22 23 24 25 26 27 28
Concentration in % NaLES

Graph VI

Graph VII



Graph VIII


GRAPH VIII
Viscosity of sodium lauryl ether sulfate solutions (25% active) at different temperatures.
1. NaLES, 25% active, containing 5% NaCl
2. NaLES, 25% active, containing 4% F.L.E.A.
0 10 20 30 40 50 60 70
Temperature

dium lauryl ether sulfates (and sodium lauryl sulfate) markedly, as evidenced by Ross-Miles and cylinder shake tests.

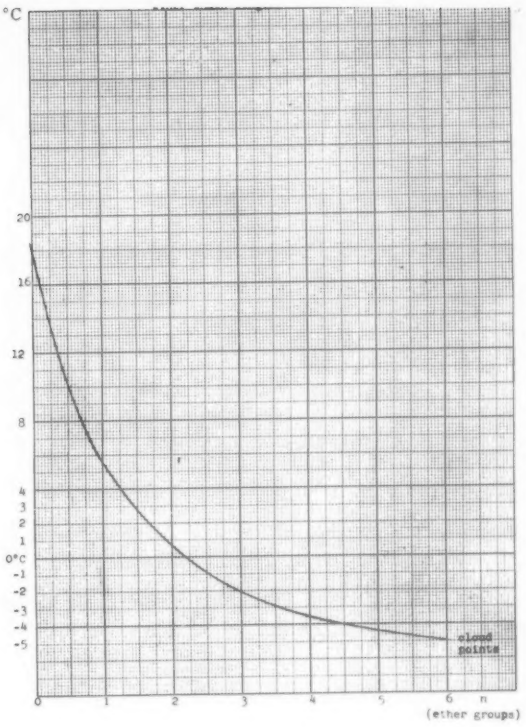
An initial substantial increase in foam heights, above levels obtained with sodium lauryl sulfate, was observed with sodium lauryl ether sulfates of n=1 to 2 ether units. Further lengthening of the ether chain yielded a foam maximum at n=2 to 4. The foaming power decreased thereafter with n=4 to 6 ether groups.

Direct foaming comparisons between sodium lauryl sulfate and specially prepared samples of sodium lauryl ether sulfate (see above for description) were also run by the Ross-Miles method and by the following procedure:

Standard solutions were prepared having 0.25% active content. Ten ml. aliquots were then pipeted into clean, dry 250 ml. glass stoppered, graduated cylinders. Each sample was run in duplicate, and into one cylinder was pipeted 50 ml. of distilled H_2O and into the other 50 ml. of synthetic hard water of 300 ppm hardness. The cylinders were then closed and clamped in a machine which was mechanically rotated 25 times. Foam heights and liquid levels were then read at 30 seconds, two minutes, five minutes and 10 minutes.

Table V compares the foaming characteristics of standard lauryl sulfate with those of lauryl ether sulfate. It can readily be seen that the lauryl ether sulfate, by this test, is a much better foaming agent than lauryl sulfate in both hard and distilled water.

The Ross-Miles results were even more impressive. It will be noted in Table VI that the lauryl ether sulfate foamed better in hard water than in distilled and that the foam levels were four to five times greater than those attained with the standard sodium lauryl sulfate. Both foam tests were run on solutions having the same concentration of detergents and the sodium lauryl ether sulfate appears markedly superior in each case.



Graph IX. Cloud Points of sodium lauryl ether sulfate and sodium lauryl sulfate solutions (25.6% active) with increasing ether chain length.

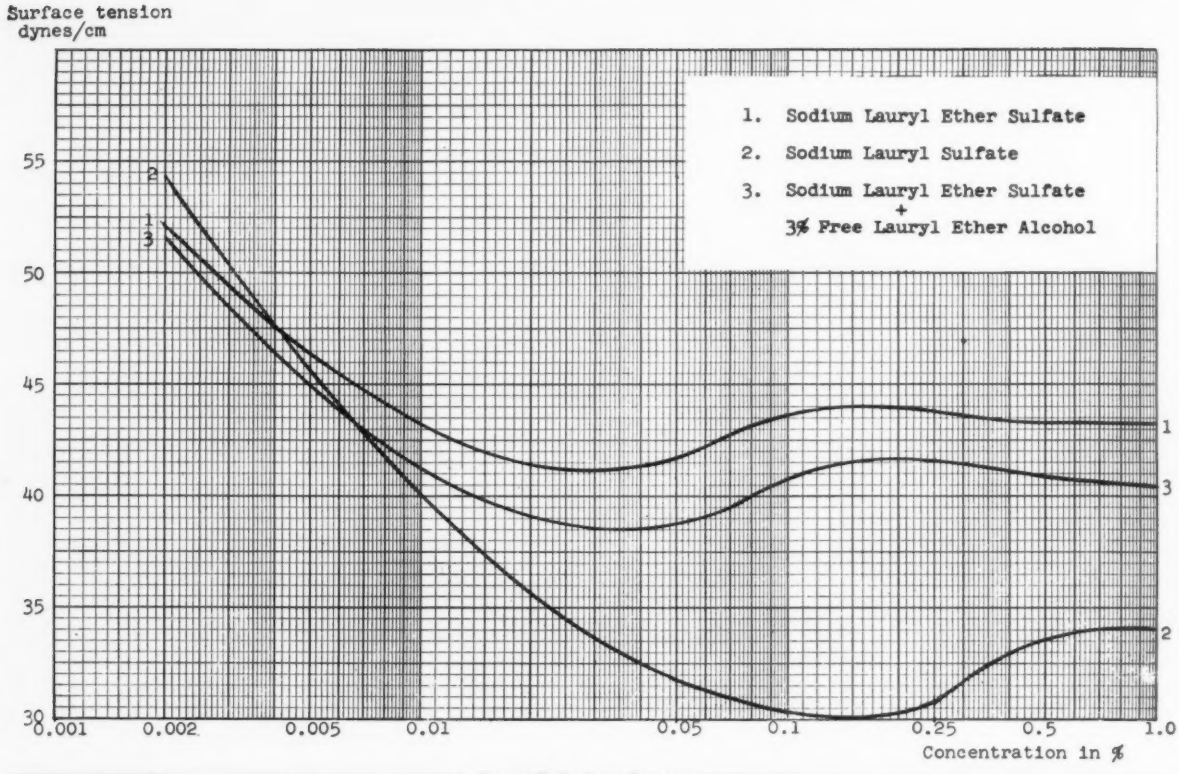
Table IV.

Surface Tension at 25° C. (dynes/cm)	(1)*	(2)†	(3)‡	(4)§
1.0% conc.	43.24	34.03	40.47	
0.5% conc.	43.23	33.57	40.93	42.54
0.25% conc.	43.92	30.81	41.62	42.77
0.10% conc.	43.69	30.35	40.93	42.77
0.05% conc.	41.62	31.73	38.86	43.23
0.002% conc.	52.20	54.27	51.51	
Distilled Water			71.97 dynes/cm	
Interfacial Tension at 25° C. (dynes/cm) vs. Mineral Oil				
1.0% conc.	14.26	13.80	14.72	
0.5% conc.	14.72	15.18	16.10	11.73
0.25% conc.	16.56	15.65	17.02	11.96
0.10% conc.	17.02	19.32	17.48	12.88
0.05% conc.	17.94	24.37	17.71	13.34
0.002% conc.	27.13	35.87	28.05	
Distilled Water			40.50 dynes/cm	

* (1) Sodium Lauryl Ether Sulfate
† (2) Sodium Lauryl Sulfate
‡ (3) Sodium Lauryl Ether Sulfate containing 3% F.L.E.A., initially at 30% activity
§ (4) Nonionic (Tallow ether alcohol)

Table V. Foam Data (Cylinder)

Time elapsed in minutes	Dist. H_2O ml liquid	ml foam	300 ppm Hard H_2O ml liquid	ml foam
"Sipon Es" (Sodium Lauryl Ether Sulfate)				
0.5	54	176	59	169
2.0	60	168	59	167
5.0	60	168	60	166
10.0	60	168	60	166
Sodium Lauryl Sulfate				
0.5	52	98	53	67
2.0	60	90	60	60
5.0	60	90	60	60
10.0	60	90	60	60



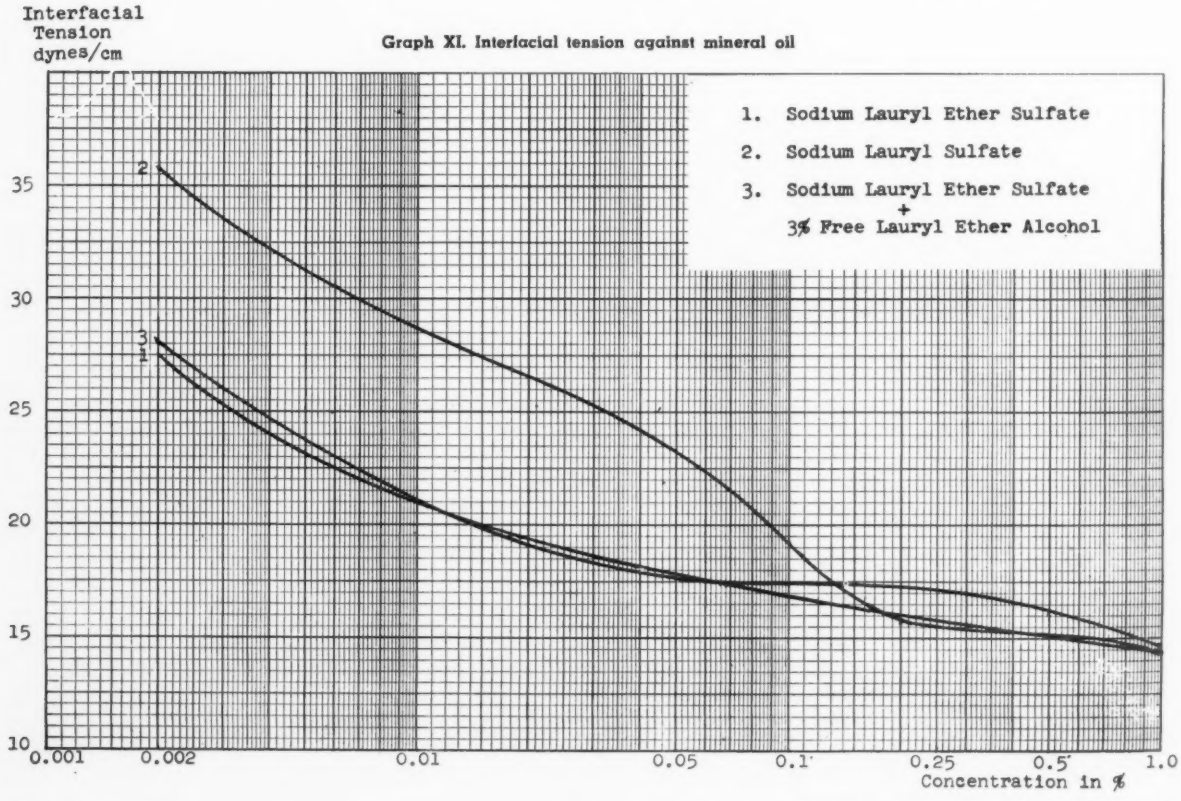
Graph X. Surface Tensions

It is worthy of note that in both hard and distilled water these dilute solutions of sodium lauryl ether sulfate were crystal clear.

Wetting times at various sodium lauryl ether sulfate concentrations were run using cotton tapes. By this test the material

(*Turn to Page* 77)

Graph XI. Interfacial tension against mineral oil



PILOT HD-90

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QUICKER AND BETTER TO PRODUCE LIQUID DETERGENTS FROM PILOT HD-90 FLAKE

MAKES LIQUID DETERGENTS EASILY

because Pilot HD-90
REQUIRES NO STORAGE TANKS
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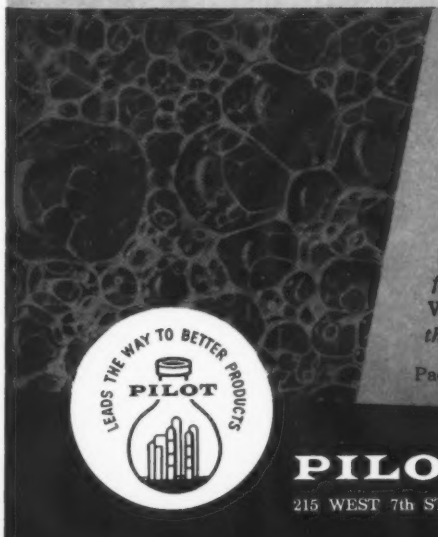
MAKES CLEAR SOLUTIONS
HAS HIGH SUDSING AND EMULSIFYING
HAS EXCELLENT PERFUMABILITY—ODORLESS BASE
REQUIRES LESS LABOR AND INVESTMENT
IS AVAILABLE IN ANY QUANTITY

because it's **COLD PROCESSED**
HIGH ACTIVE ALKYL ARYL SULFONATE
90.0% minimum active drum dried flake



Only cold processing at temperatures below freezing can produce *concentrated uniform* sulfonation! Every micelle produced in solution from Pilot HD-90 is homogeneously effective for such use as household sudsers, industrial detergents and scouring powders. Cold processing eliminates undesirable side reactions, hydrocarbon odors, and any rearrangement of the molecular structure. Pilot HD-90's high quality in the making and mixing of dry products is equally applicable to the manufacture of liquid detergents. Pilot HD-90's concentrated and sulfate-free properties *eliminate filtering;* give liquids the highest sudsing and cleaning powers obtainable. Write for formulas and samples. *Only Pilot HD-90 Detergent features this premium quality at competitive prices!*

Packed in polyethylene lined fibre drums and in 5-ply paper bags.

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News

Beach Appoints Amateis

The appointment of Charles L. Amateis as its sales representative to cover Delaware, Maryland,

Charles L. Amateis

Virginia and the District of Columbia was announced last month by Beach Soap Co., Lawrence, Mass. He is selling and servicing the company's complete line of wash room supplies including "Prime Sohp" and other specialty products for commercial laundries and institutions. Mr. Amateis has completed Beach's training course on commercial and institutional laundering and is equipped to render technical service on washroom problems. Mr. Amateis lives in Washington, D. C.

—★—

Wyandotte Builds La. Plant

A multi-million dollar ethylene oxide plant near Baton Rouge, La., will be built by Wyandotte Chemicals Corp., Wyandotte, Mich., it was announced last month by Robert B. Semple, president. The company has purchased 700 acres and has the option of an additional 500 acres of land on the Mississippi River near Geismar in Ascension Parish. The plant to be built there is scheduled to go on stream in the fourth quarter of 1957 and constitutes the first major manufacturing expansion outside the city of Wyandotte in the 66-year history of the company. The Louisiana plant will be operated by Wyandotte's Michigan Alkali division of which Bert Cremers is general manager.

—★—

Pennsalt Improves GMK

Reformulation of its "GMK" (General Manual Kleanser) farm and dairy cleanser was announced recently by Pennsylvania Salt Manufacturing Co., Philadelphia. Incorporation of nonionics, anionics, and additional polyphosphates are said to increase wetting power and detergency, particularly in hard water areas. In addition, Pennsalt claims it has dedusted the product for greater ease of handling. The cleanser belongs in Pennsalt's line of "B-K" sanitation chemicals, and comes in five, 10, and 25 pound farm packages and 125 and 350 pound bulk sizes.

—★—

Award to James Park

James G. Park, vice-president of Enjay Co., New York, was honored last month by the Alumni Association of the Polytechnic Insitute of Brooklyn. He received the association's "Public Service Award" for leadership in civic and community organizations and for professional achievement. He earned his degree in chemistry at Brooklyn Polytechnic in 1921.

—★—

Turco Offers New Cleaner

Turco Products, Inc., 6135 South Central Avenue, Los Angeles 1, recently introduced a new cleaning solvent, designed for in-place cleaning of electrical equipment. "Turco-Solv" may also be used for hand wiping of small parts, for grease pencil, chalk and ink removal, and for other cleaning jobs incident to plant maintenance.

The formulation incorporates a detergent, is said to be nonconductive, to evaporate completely, and to be safe on all metals, paint and varnish. Initial flash point of "Turco-Solv" is over 200°F, and does not drop below 125°F.

A bulletin describing the product and its application is available from Turco.

Shulton Names Klingel

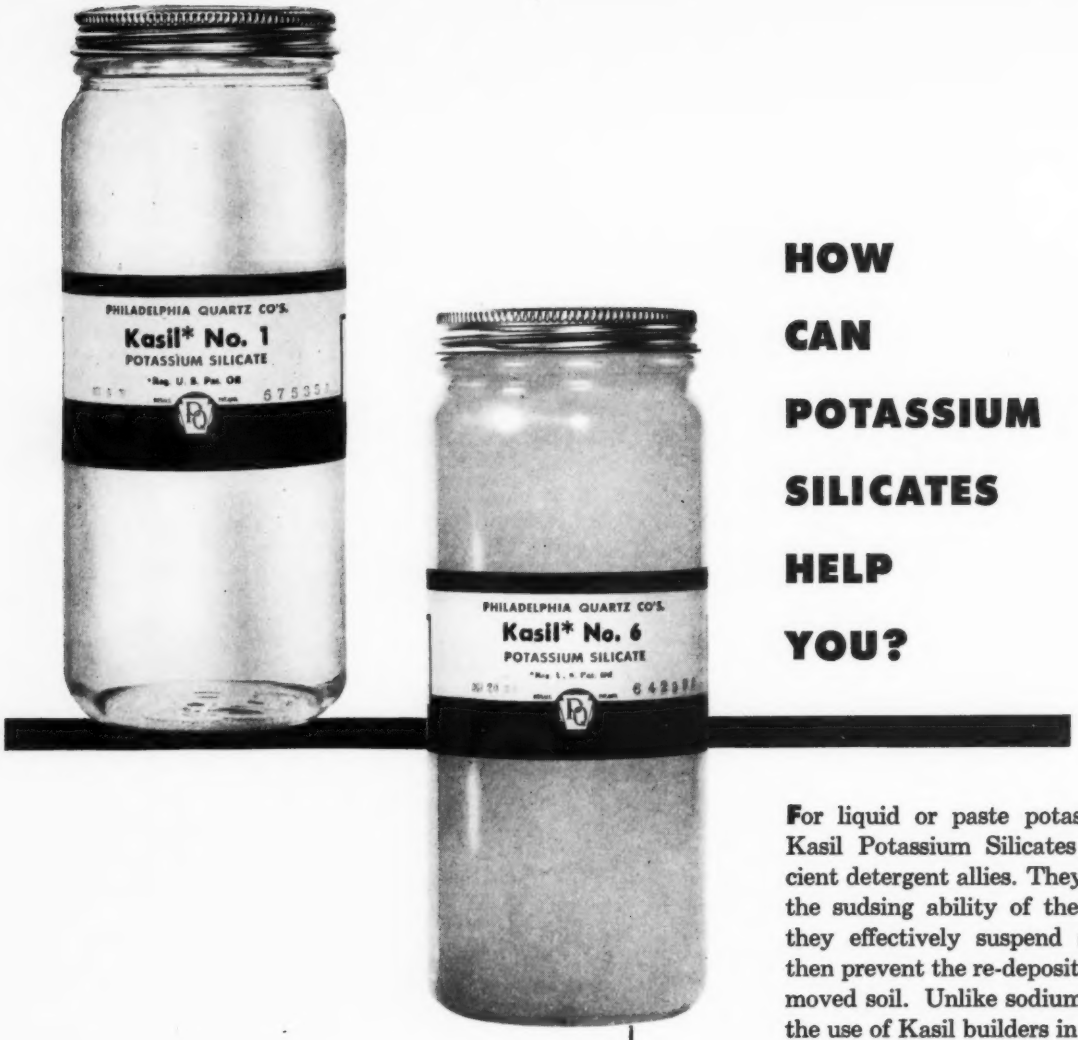
Appointment of Harry Klingel as director of research of the fine chemicals divisions of

Harry Klingel

Shulton, Inc., Clifton, N. J., was announced recently by Richard E. Brainard, vice-president in charge of the division. Shulton's fine chemicals division has plants in Clifton and Newark, N. J., producing chemical elements for use in the toiletries, drug, food and tobacco industries.

Mr. Klingel joined Shulton in 1955 when the company acquired A. Maschmeijer, Jr., Inc. He had served with the Maschmeijer organization as a chemist specializing in synthetic organic pharmaceuticals since 1943.

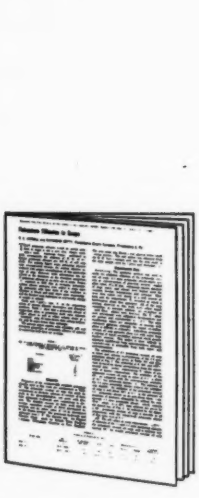
Prior to joining the Maschmeijer company, Mr. Klingel was with H. A. Mertz Laboratories and their successors Winthrop Chemical Co. at Brooklyn and Albany, N. Y. plants.



HOW CAN POTASSIUM SILICATES HELP YOU?

For liquid or paste potash soaps, Kasil Potassium Silicates are efficient detergent allies. They increase the sudsing ability of these soaps, they effectively suspend soil, and then prevent the re-deposition of removed soil. Unlike sodium silicates the use of Kasil builders in liquid or soft paste soaps does not materially alter their viscosity.

In sodium soap, the addition of Kasil Potassium Silicate partially converts it into a potash soap. Increased solubility and rate of solution as well as improved sudsing result without the possibility of salting out.



Let us send the supporting details on Kasil detergent values. Ask for publication, "Potassium Silicates in Soaps."

METSO

PQ Silicates of Soda

METSO DETERGENTS

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ASSOCIATES: *Philadelphia Quartz Co. of Calif. Berkeley and Los Angeles, Calif., Tacoma, Wash.; National Silicates Limited, Toronto, Canada.*

Govt. to Defy Court Order in Soap Suit

THE Department of Justice late last month announced that it would not make available grand jury minutes to soap companies fighting a civil anti-trust suit. The minutes were taken during a criminal anti-trust suit against the same companies: Procter & Gamble Co., Cincinnati; Lever Brothers Co., New York, and Colgate-Palmolive Co., New York, and the Association of American Soap & Glycerine Producers, Inc., New York. The criminal anti-trust suit was dropped when a grand jury failed on Nov. 25, 1955 to return indictments after an 18 month investigation of the soap industry.

Attorneys for the soap companies had asked to examine the minutes of the earlier suit, which they felt were the basis of the civil suit. Federal Judge Alfred E. Modarelli, sitting in Newark, N. J., agreed to this request and ordered the office of U. S. Attorney General Herbert Brownell, Jr., to make available the grand jury minutes of the criminal anti-trust suit. By defying this order through a subordinate, Assistant United States Attorney Joseph E. McDowell, Mr. Brownell runs the risk of being cited for contempt of a Federal court. The contempt possibility arose in the pre-trial phase of the civil suit.

Mr. Brownell, according to Mr. McDowell, regards Judge Modarelli's order as a violation of grand jury processes.

Judge Modarelli, in signing the order, July 23, ruled that the issue of grand jury secrecy is not involved. He declared that the defendants had as much right to use the minutes in self-defense as did the Government in preparing its case.

The Government's current suit charges the defendants with "restricting and controlling competition among themselves and with others." The complaint also asserts the companies have "successfully sought to maintain, augment and exploit positions of dominance" in soap production and sales.

—★—

New Harchem Depot

Harchem Division of Wallace & Tiernan Inc., Belleville, N.J., recently opened a new shipping and storage depot at Belleville for "Century Brand" oleic acids. The new facilities permit delivery of all quantities and grades of oleic acid within 24 hours to customers in the Middle Atlantic states.

—★—

Solvay Moves in Pittsburgh

Solvay Process Division of Allied Chemical & Dye Corp., New York, recently announced removal of its Pittsburgh, Pa., offices to new quarters at 3 Gateway Center, Pittsburgh 22. Solvay will share the new offices with General Chemical Division, which moved there at the same time.

—★—

Florasynth Price List

Florasynth Laboratories, Inc., New York, recently published a new edition of its wholesale price list. The 28-page brochure carries prices of essential oils, aromatic chemicals, specialties, and flavors as well as other products in the Florasynth line.

—★—

New Dow Lab

Formation of an eastern research laboratory at Framingham, Mass., and appointment of Fred W. McLafferty as its director was announced last month by Dow Chemical Co., Midland, Mich. Located in existing facilities at Dow's Framingham operations, the laboratory will be responsible for long range fundamental research according to R. H. Boundy, vice-president and director of research, who made the announcement. Dr. McLafferty received his Ph.D. degree from Cornell University in 1949, joined Dow's spectroscopy laboratory in Midland in 1950.

Fred W. McLafferty

—★—

New D&O Petitgrain Oil

Dodge & Olcott, Inc., New York, is offering a new grade of South American petitgrain oil, it was announced recently. Under the brand name "Corona de Oro" the oil will be carried in three grades: 55 percent ester, 60/65 percent ester, and 65/70 percent ester. It is produced by only one grower in Paraguay. D&O says the oil, with an unusual neroli-like note, has a better perfume value than the oil ordinarily offered from Paraguay, due to careful selection of leaves and modern distillation techniques. The material comes packed in 25 pound cans at $3.75, $4.50; and $4.75 per pound, respectively, according to ester content.

—★—

Two to Hooker Tech. Staff

G. Florence Burton and Carlo J. Verbanic have joined the technical staff of Hooker Electrochemical Co., Niagara Falls, N.Y., it was announced in July by Johannes H. Bruun, director of research and development. Miss Burton, assigned to the physical chemistry section of the analytical group, was graduated from Waynesburg College in June with a bachelor of science degree. Dr. Verbanic, assigned to polymers research, was a research associate at the University of Michigan, prior to joining Hooker. He received a bachelor of science degree in chemistry from Canisius College in 1950, a master of science from Holy Cross College in 1951, and a Ph.D. in organic chemistry from Indiana University in 1956.

Held at 110°F. for 4 weeks—

Neo-Fat® Red Oils prove

their superior stability!

The soap made with Armour Neo-Fat Red Oil keeps its color—continues after a 4 week heat stability test to look and smell as fresh as the day it was made. The soaps made with other brands of red oil started to change color early in the test and after 4 weeks were worthless.

Sodium soap made with Armour Neo-Fat 94-04 (Red Oil).

Sodium soap made with Brand "A" Red Oil.

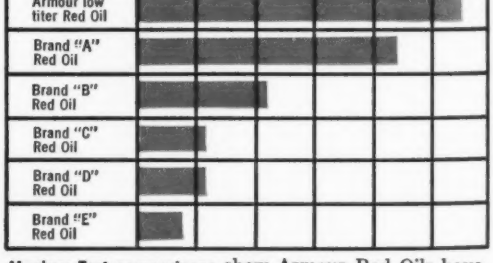
Sodium soap made with Brand "B" Red Oil.

In storage and during high temperature processing, tests prove conclusively that Armour Red Oils offer the greatest resistance to heat, color degradation and oxidation. This greater stability means your soaps and cosmetics will have longer shelf life, look and smell fresher in use. In lubricating, scouring or finishing textiles, this also means your textiles won't develop unpleasant odors.

This superior Armour Red Oil has low pour point, low unsaponifiable and high oleic content. It is consistently uniform in composition and quality because of strict production control and rigidly enforced specifications.

Armour's basic position in fats and oils also assures you of a constant, never-failing source of supply. For information and samples of Neo-Fat 94-04 Red Oil, simply write us listing your application or send the coupon below.

ARMOUR—your one best source for all fatty acids.



Mackey Test comparisons show Armour Red Oils have 21.2% greater oxidation stability than the next best brand. The Mackey Test measures resistance to oxidation; is based on the time required to reach 105° C.

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ARMOUR CHEMICAL DIVISION

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In New Lever Posts

The appointment of Michael J. Roche as general manager of the corporate advertising services

Michael J. Roche

division and the naming of Samuel Thurm as director of the media division were announced late in July by Lever Brothers Co., New York. These are newly created units and are designed to provide greater specialization in the company's advertising activities.

Mr. Roche has been with Lever Brothers Co. since 1920 and for more than 25 years has held executive positions in its advertising department. The new division which he directs will develop policies and procedures covering advertising agency relationships as well as those governing advertising work with the company.

Prior to joining Lever Brothers, Mr. Thurm was associate media director for four years of

Samuel Thurm

Young & Rubicam, Inc., New York advertising agency. He entered the agency in 1946 as assistant research director. Previously he was research director of Eversharp, Inc.

★

Becco Staff Changes

Becco Chemical Division of Food Machinery and Chemical Corp. Buffalo, N. Y., recently advanced two and added one new member to its sales staff. Dewey H. Nelson, mid-west district manager since 1952, has been advanced to assistant to the sales manager, John F. Shea, vice-president in charge of sales announced.

James F. Whalen, Jr., Becco sales representative attached to the southeastern district office in Charlotte, N. C., succeeds Mr. Nelson as mid-west district manager in Chicago. Edward A. Dalmas has joined the Charlotte sales staff, replacing Mr. Whalen.

Mr. Nelson, a graduate of M.I.T., joined Becco in 1947. A graduate of the University of Alabama, Mr. Whalen joined the firm's research laboratory in Buffalo in 1946 and was transferred to the sales staff in 1949. Mr. Dalmas was graduated from the North Carolina State University in 1953, and served in the Navy during World War II. Prior to coming with Becco he had been associated with Organic Chemical Corp., Providence, R. I.

★

Hooker Income Up

Hooker Electrochemical Co., Niagara Falls, N. Y., and its wholly owned subsidiaries, for the first six months of their fiscal year, ended May 31, 1956, reported net sales totalling $49,658,200, compared with $46,540,000 for the six months ended May 31, 1955. Net income in the 1956 period was $5,743,400, equal to earnings of 94 cents per share of common stock outstanding, after payment of preferred dividends. This compares with net income of $5,121,400 and earnings of 83 cents per common share for the comparable period in 1955. Preferred dividend requirements totalled $106,200 for both periods.

Johnson Victor Sales Mgr.

Donald L. Johnson has been appointed sales manager for Victor Chemical Works, Chicago, it was

Donald L. Johnson

announced late in July by Morris R. Stanley, vice-president and director of sales. A native of Chicago, Mr. Johnson joined Victor in 1938 and shortly thereafter was appointed sales representative in the company's New England territory. He was a member of Victor's New York sales staff from 1942 until early this year when he moved to the company's headquarters in Chicago to become assistant sales manager.

Before joining Victor, Mr. Johnson spent several years with E. I. du Pont de Nemours & Co., Wilmington, Del., and Libby, McNeill and Libby. He is a graduate of Knox College, Galesburg, Ill.

★

Westvaco Honored

On behalf of Westvaco Mineral Products Division of Food Machinery and Chemical Corp., New York, W. N. Williams, president

William C. Byrnes of R. I. A. presenting award to W. N. Williams.

Worth Your Investigation...

CYCLAMAL

An Aldehyde of great stability and of such high degree of purity that it can be used in the finest perfume extracts as well as soaps and cosmetics.

RESEDALIA

An Acetal resembling the aroma of Reseda Mignonette. It is a valuable addition to all floral bouquets, and as a modifier for the purpose of rounding off all types of compositions.

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An Aldehyde of great potency; imparts the aldehydic top note to perfumes to which it is added. It is extremely valuable as a modifier. Used from 1/10 to ¼ of 1%.

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An Acetal, ideal for all rose type compounds, because of its fine character, great lift and extreme stability.

The advantage of these aromatic chemicals is that their great purity permits their use in the most luxurious perfumes . . . and their low cost makes them feasible for even the most inexpensive soap fragrances.

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PRODUCTS BUILD SALES FOR *Your* PRODUCTS

Aromatics Division
VERONA CHEMICAL COMPANY
Plant and Main Office: 26 Verona Avenue, Newark, N. J.
1210 Rosedale Avenue, Chicago, Ill.

of Westvaco, received the 1956 Research Institute of America Award for Merit last month. The award was presented by William C. Byrnes of R.I.A. Set up to honor "effective contribution to the development of executive skills," this year's award to Mr. Williams was given in recognition of the company's maintenance training program at Westvaco's Newark, Calif., plant.

★

ACS Marketing Symposium

A symposium on cosmetics will be held by the division of marketing and economics of the American Chemical Society at the 130th ACS national meeting in Atlantic City, N. J., Sept. 16-21. The symposium is scheduled for Sept. 20, under the co-chairmanship of Pierre Bouillette, technical sales advisor of Givaudan-Delawanna, Inc., and Jean R. L. Martin of Martin-Valer, consultants.

Following opening remarks by the co-chairman, these seven papers will be presented: "Marketing Chemical Specialties to the Cosmetic Industry," by R. E. Horsey, vice-president of sales, Givaudan-Delawanna, Inc., and R. E. Vicklund, manager of sales and development of Sindar Corp.; "Development, Evaluation and Marketing of Shampoos," by Donald H. Powers, director of cosmetic research for Warner-Lambert Pharmaceutical Co.; "Federal Trade Commission's Trade Practice Rules for the Cosmetic and Toilet Preparations Industry," by Paul M. Cameron, chief, Trade Practices Conferences, Federal Trade Commission; "Aromatics with an "A" as in Atom" by Jack Mohr, general manager, Lentheric Division, Olin Mathieson Chemical Corp.; "Cosmetics and Toiletries for Men," by Oliver L. Marton, chief perfumer, Shulton, Inc.; "We Have Something In Common," by Norman C. Chadwick, vice-president of merchandising and sales promotion, Avon Products, Inc.; and "Merchandising of Toilet Soaps," by G. H. Dickey, product manager, Lever Division, Lever Brothers Co.

Waldeck Joins Shea

The appointment of Dr. William F. Waldeck to fill its newly created post of technical director was announced late last month by Shea Chemical Corp., Jeffersonville, Ind. Until late June, Dr. Waldeck was director of research for Wyandotte Chemicals Corp., Wyandotte, Mich. His major function with Shea will be to direct the development of new products and processes, according to Vincent H. Shea, president.

Dr. William F. Waldeck

Dr. Waldeck, who will make his headquarters at the firm's New York City office, has been in the chemical industry for more than 23 years. In 1930 he was graduated from New York University with a B.S. degree in chemical engineering. He received his Ph.D. in 1933 from N.Y.U., and joined Columbia Southern Chemical Corp., that year as a research chemist. In 1939, he left to join Wyandotte Chemicals Corp., serving until last June in the following capacities: assistant director of technical service, chemical engineering supervisor, associate director of research and director of research.

★

New Hammons Dispenser

A new refillable bench dispenser was introduced recently by Hammons Products, Inc., Fort Wayne, Ind., for its waterless skin cleanser. Made of polyethylene the dispenser holds 16 ounces of cleanser and is intended for the individual use of the employee on the spot. The container features a double cap with a small opening for economic dispensing and a large aperture for quick refilling. Space is provided for the serial numbering of the squeeze bottles to prevent loss. Economy in time and promotion of cleanliness are claimed to result from the use of the individual dispenser. A greaseless residue of lanolin, glycerine, and hexachlorophene is said to remain on the skin after use of the cleanser which aids in the prevention of skin damage.

★

Harold A. Sweet Dies

Harold A. Sweet, 61, director of the industrial division of Refined Products Co., Lyndhurst, N. J., died June 30 after a brief illness. Formerly with the sales and sales development departments of General Dyestuff Corp., a division of General Aniline and Film Corp., New York, for 34 years, he joined Refined Products in 1951. Mr. Sweet, a 1915 graduate of Syracuse University, was a pioneer in the sale of synthetic detergents, wetting agents and emulsifiers. Prior to joining General Dyestuff Corp. in 1931, Mr. Sweet was department head in the manufacturing division of General Aniline Works Division.

Mr. Sweet's son, Harold Sweet, Jr., has been appointed to succeed his father as director of the industrial division of Refined.

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Diversey Earnings Lower

Net income and share earnings of Diversey Corp., Chicago, declined from $251,831 and 87 cents in the first half of 1955 to $234,499 and 91 cents in the first six months of this year, it was reported late in July. Second quarter earnings were off in 1956, as compared with the three months ending June 30, a year ago. Diversey reported a net income of $187,257 in the second 1956 quarter, equal to share earnings of 72 cents, as against $190,721 and 74 cents in the comparable period of 1955.

Like a claw, Dow chelating agents firmly grasp and hold metal ions in solution, preventing them from undergoing the usual chemical reactions. But why so many Versene products? Are they effective on all metallic ions? We hope this continued discussion provides the answers, and further clarifies what chelates will do—and won't do.

DOW

The Chemistry of Chelation: Part III

Specific agents for specific conditions · Caustic solutions Changing solutions · Industry responds

In all, Dow offers 15 commercially available chelation products. These are grouped in the Versene®, Versenol®, and iron specialty (Versene Fe-3 Specific®, Versene T®, Versene S) series. The Versene and Versenol series were discussed in Part II of this advertisement. When used in solution, the Versene products inactivate practically any polyvalent metallic ion they contact. They accomplish this by actually forming a new compound in which the metal ion becomes a member of a stable inner ring structure in the molecule, so that no reversion or breakdown can occur. However, no one chelating agent can complex all metal ions under all conditions. One of the major considerations determining which chelating agent to use is pH. To illustrate, let's look at iron-containing systems, among the most troublesome for chemical processors.

SPECIFIC AGENTS FOR SPECIFIC CONDITIONS

The first amino acid type chelate made commercially available was Versene, the tetrasodium salt of EDTA*. It is the most versatile member of the series for it ties up most polyvalent metal ions throughout the pH range—with this notable exception: It is excellent for complexing iron in the acid range only. For economy above pH 7, we must look to a later development, Versene Fe-3 Specific.

The most effective and efficient agent known for complexing iron in the mildly alkaline pH range, Versene Fe-3 Specific also chelates copper, nickel, and cobalt—but has no effect on calcium, magnesium or other common non-transition metal ions. Where calcium and magnesium along with iron cause difficulty in alkaline solutions, a blend of Versene and Versene Fe-3 Specific is the answer. This mixture, called Versene Fe-3, complexes all of these troublesome ions. Its Versene Fe-3 Specific content is sufficient so as to automatically take care of the quantity of iron normally encountered in hard water.

Versene Fe-3 is also considered an important adjunct to the polymerization of synthetic rubber. It controls the concentration of the iron ions catalyzing the reaction, thus insuring a more-uniform, higher-quality end product.

CAUSTIC SOLUTIONS

For chelating iron in caustic solution, another agent enters the picture—Versene T. This material ties up iron in a wide range of caustic solution concentrations. It also complexes calcium, magnesium, nickel, cobalt, and other metal ions—throughout the normal pH range as well as in caustic solutions. In the presence of a suitable reducing agent, Versene T functions effectively as a rust remover—and without the drawbacks of acid cleaners. Versene T thus finds widespread use in boiler and heat exchanger cleaning, textile processing, etc.

Another effective chelating agent that is selective for iron in the free caustic pH range is Versene S. Since it will not chelate alkaline earth ions, Versene S is especially suitable for use in silicate-lined textile processing kiers.

CHANGING SOLUTIONS

In special instances where a processing solution is strongly alkaline at first, then changes to neutral or to acidic, iron can be controlled with a mixture of Versene T and Versene Fe-3 Specific. In this combination, the Versene T component complexes the iron when the solution is caustic. As the pH drops, Versene Fe-3 Specific takes over.

INDUSTRY RESPONDS

Every day, Dow chelates are finding new and expanding usage—in textile manufacturing and rubber processing, in soaps, synthetic detergents, cosmetics, and pharmaceuticals. Their ability to control ionic concentrations, to eliminate product breakdown, to smooth out production and save money, has brought enthusiastic response from industry. That they are solving a multitude of processing problems is true. But chelates are no cure-all. To uncover their profitable uses, we will help in any way we can. Write us on your company letterhead for application data and technical assistance. Technical Service and Development, Department SC 913H-I, THE DOW CHEMICAL COMPANY, Midland, Michigan.

*Ethylenediaminetetraacetic acid

THE NEXT TOPIC IN THIS SERIES

PART IV *October* — Applications in specific industries (formulation of alkaline cleansers—stabilization of hydrogen peroxide and kier boiling in textile processing—uniform control of trace metal catalysts in polymerization of synthetic rubber—other industrial applications).

you can depend on DOW CHEMICALS DOW

Advance Two Victor Men

Donald G. Brower has been appointed acting manager of the research and special products divi-

Donald G. Brower

sions and Willard H. Woodstock has been named chief chemist, it was announced last month by Rothe Weigel, president of Victor Chemical Works, Chicago. Mr. Brower joined Victor in 1932 and for many years was associated in various capacities with evaluation and application of new chemical developments in the laboratories. Since 1950 he has been in charge of the special products division, and has served as a member of the research planning committee of Victor, since its establishment in 1951. He is a graduate chemist of the University of Chicago, and holds memberships in the American Chemical Society and the Commercial Chemical Development Association.

Mr. Woodstock joined Victor in July, 1929. He holds an M.S. degree from Wisconsin University. Mr. Woodstock has been assistant chief chemist since 1946, a post he has held until his recent appointment. He holds more than 20 patents covering the manufacture and application of Victor chemicals. Mr. Woodstock is author of several technical papers, and is a member of the American Chemical Society, and has served as an editorial advisor of the *Journal of the American Chemical Society*. He is also a past director of the Chicago Section of the ACS.

Willard F. Woodstock

★

Ask Can Co. Merger Ban

The Department of Justice, early this month, filed suit to prevent the proposed merger of Hazel-Atlas Glass Co., Wheeling, W. Va., and Continental Can Co., New York. The plans for the merger of the two businesses were reported last month. The Department of Justice action was taken in Federal Court in San Francisco, and seeks a temporary restraining order against the consolidation which had been set for Aug. 8. The government suit is based on the fact that the two companies are competitors. A hearing was to have been held Aug. 6.

★

Acquires Canadian Crown

The acquisition of Canadian Crown Cork Co., Ltd., by Continental Can Co., New York, was announced recently in a joint statement in Montreal by Frank A. Whittall, president of Continental Can Company of Canada, Ltd., and John M. Gardiner, president and general manager of Canadian Crown.

The move marks the first entry of a metal container company in Canada into the crown cork field. Completion of negotiations whereby Continental purchased the capital stock of Canadian Crown through its subsidiary, Colonial Canners, Ltd., will add crown cork production to existing Continental facilities in metal containers, paper cups and paper milk bottles.

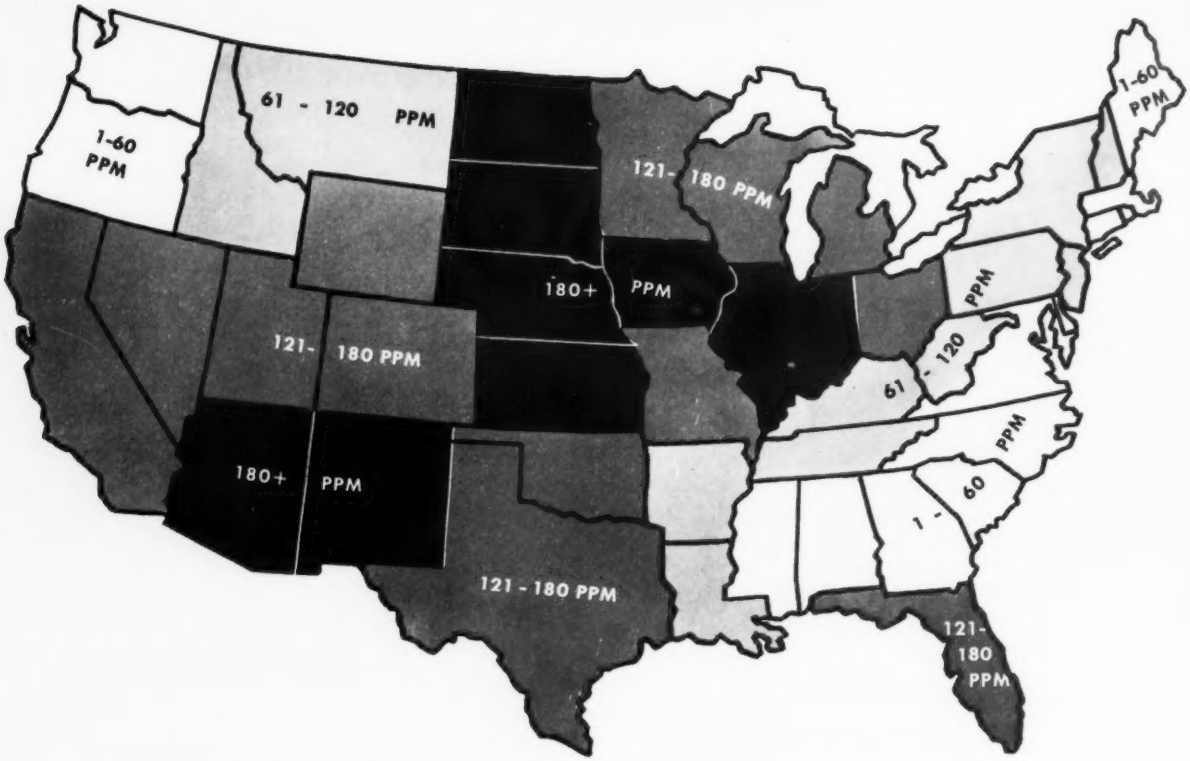
Smith Joins Treplow

Arthur R. Smith, formerly of American Alcolac Corp., Baltimore, was recently named sales

Arthur R. Smith

manager of Treplow Products, Inc., Paterson, N. J. A 1941 graduate of Wagner College with a B.S. degree, he received an MBA degree from Columbia University in 1948. That year he joined E. I. du Pont de Nemours & Co., Wilmington, where he worked until 1949, when he joined Ultra Chemical Works, Inc., Patterson, N. J. In 1952, Mr. Smith left Ultra to join American Alcolac, where he remained until joining Treplow.

New lanolated soap for dry skin announced recently by Sayman Products Co., St. Louis, complements Sayman's "Vegetable Wonder Soap," a 79 year-old product which has been dressed in a new wrapper, the design of which matches that of the new soap. Lanolated pink soap comes in pink wrapper with red band, while color scheme of wrapper for its older counterpart is delicate green with green band.



HYAMINE *Dairy Detergent Sanitizers*

Now Officially Accepted for Hard Water Areas

The recent revision of Appendix F of the U. S. P. H. S. Milk Ordinance and Code permits the use of HYAMINE quaternary ammonium bactericides for dairy sanitation in hard water areas.

This will bring all the advantages of HYAMINE-TRITON dairy detergent sanitizers to areas with water hardnesses up to 600 ppm. Furthermore, it is expected that regional tests may validate the use of these products at even higher levels of hardness. As a result, dairy farmers and commercial dairies in practically all regions will be able to wash and sanitize equipment and utensils in *one easy operation.*

HYAMINE-TRITON detergent sanitizers have already demonstrated outstanding cleansing and germ-killing power in New York State and many southern areas. They are safe and odorless, relatively easy to test for activity, and leave no toxic residue when used in recommended amounts. Write today for complete information.

ROHM & HAAS COMPANY
Washington Square, Phila. 5, Pa.

☐ Please send Bulletin SAN 105-1
"Detergent Sanitizers for Dairy and Food Equipment."

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HYAMINE *and* TRITON *are trade-marks, Reg. U.S. Pat. Off. and in principal foreign countries.*

Stepan Completes New Detergent Plant

NEW plant facilities, valued at over one million dollars, have been constructed by Stepan Chemical Co., Chicago, in Millsdale, Ill., near Joliet, it was announced late last month. All of Stepan's new detergent products will be made at the new 300-acre site, and the current product line will continue to be made at the existing Stepan plant on the south side of Chicago. The new plant at Millsdale is now in its second stage of building, in anticipation of future markets. Final construction plans are not definite as yet, however, a budget of approximately $1.5 million has been appropriated to be spent within the next year and a half, according to D. B. Hatcher, vice-president and general manager.

Manufacturing facilities recently completed consist of four buildings, all of which are relatively small. In addition to manufacturing facilities, a laboratory for research and development is planned for the near future. Present indications are that the entire area will eventually become a chemical center. A site of about 260 acres adjoining the Millsdale plant has been purchased by a group for development as a chemical center. The site is now being served by the Gulf Mobile and Ohio and Santa Fe railroads. The area is also on the Illinois deep waterway, which connects with the Mississippi River.

Among the new products being manufactured is a series of alkyl phenols, which include nonyl and dinonyl phenols. Other chemicals include alkyl and aryl sodium toluene and xylene sulfonates.

One of the largest proposed additions is an ethylene oxide adducts unit which will be used for the ethoxylation of both alkyl phenols as well as non-phenolic materials. Surface active amides will also be produced in the new plant. Although much of this work is still in the planning stage, the company is certain that some sulfation of fatty alcohols for the surfactant field will be done. Much of Stepan's production will go into liquid light-duty detergents, emulsifiers for foam stabilization, cleaners and synthetic scrub soaps.

Top: view looking down the road built by Stepan into its new Millsdale property. The building furthest to the left is the ethoxylation unit, and the building directly to the left of the road is a combination alkylation and sulfonation building. The first low brick building on the right is the control laboratory and employee locker and shower rooms. The one directly behind it is the power house and repair and maintenance machine shop.

Lower photo is view from northwest of new Stepan detergent plant in Millsdale. This photograph shows the start of the raw materials tank farm. The horizontal tanks in the foreground are for ethylene oxide, and the initial reactor for ethoxylating can be seen under construction at the end of the nearest building.

Four New "Petrosuls"

Four additions to the "Petrosul" series of petroleum sulfonates were introduced last month by Pennsylvania Refining Co., Butler, Pa. The neutral calcium and barium "Petrosuls" are high molecular natural alkaline earth sulfonates with especially high oil solubility. They are suggested for use in rust preventive and fuel oil additive formulations.

"Alkasol 645," a sodium sulfonate made from synthetic alkylate feedstock, is suggested for the same purpose and also as raw material for production of motor oil additives. "Petrosul 645" is a blend of segregated natural petroleum sodium sulfonates, suggested in applications where emulsibility and corrosion protection are required, or where a single sulfonate is required to function in different type formulations.

A new six page bulletin is available from the manufacturer featuring specifications and physical properties and a selection guide.

★

Fine Organics New Rep.

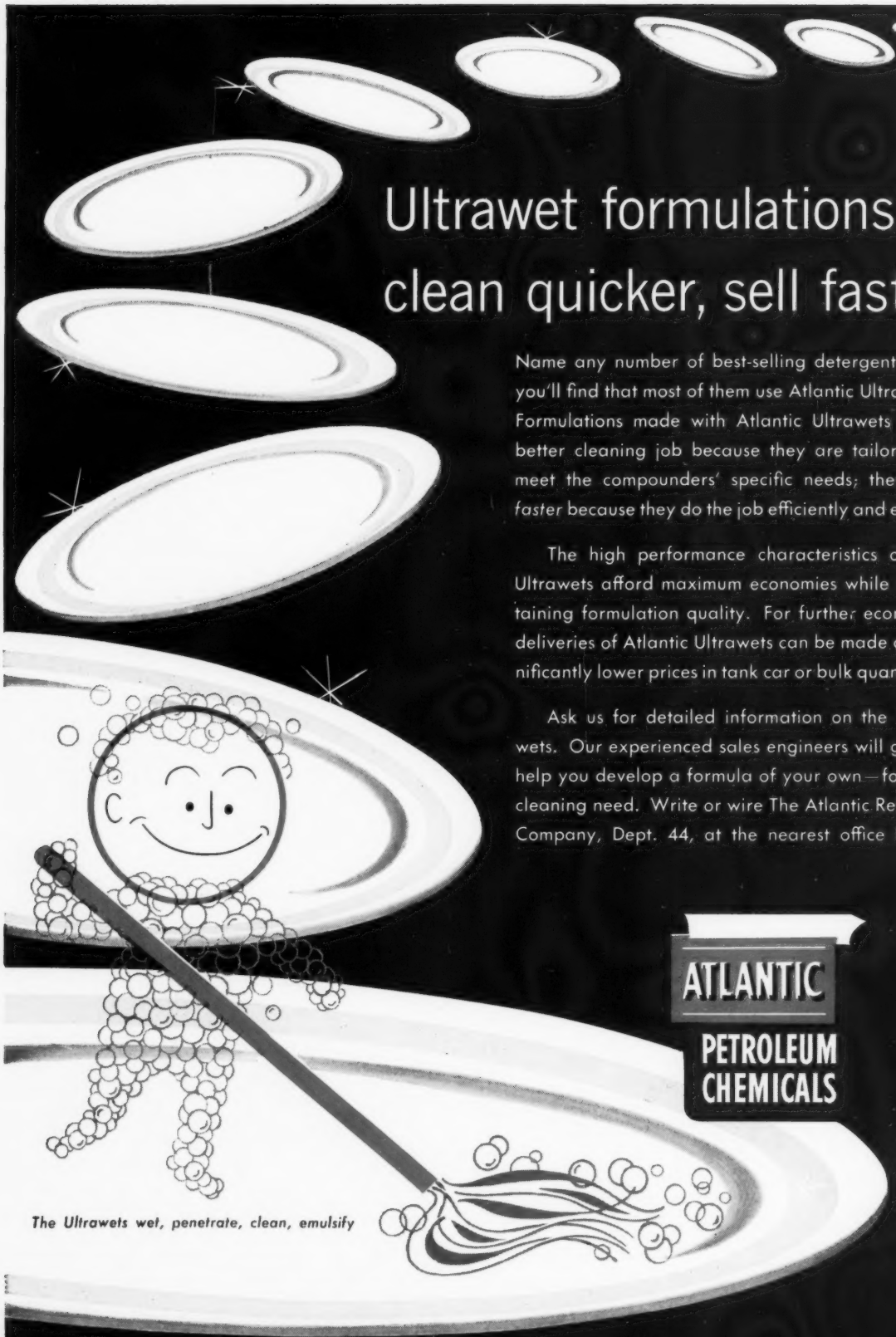
Fine Organics, Inc., New York, appointed Virginia-Carolina Safety Equipment Co., Waverly, Va., as exclusive sales representative, for North Carolina, it was announced recently by Emanuel Rosenblat, assistant to the president of Fine Organics. Virginia-Carolina is founded and headed by O. P. Baird, who was previously associated with West Disinfecting Co., Long Island City, N. Y., Pulmosan Safety Equipment Corp., and Goodyear Tire & Rubber Co.

Ultrawet formulations clean quicker, sell faster

Name any number of best-selling detergents and you'll find that most of them use Atlantic Ultrawets. Formulations made with Atlantic Ultrawets do a better cleaning job because they are tailored to meet the compounders' specific needs; they *sell faster* because they do the job efficiently and easily.

The high performance characteristics of the Ultrawets afford maximum economies while maintaining formulation quality. For further economy, deliveries of Atlantic Ultrawets can be made at significantly lower prices in tank car or bulk quantities.

Ask us for detailed information on the Ultrawets. Our experienced sales engineers will gladly help you develop a formula of your own—for *any* cleaning need. Write or wire The Atlantic Refining Company, Dept. 44, at the nearest office listed.



The Ultrawets wet, penetrate, clean, emulsify

ATLANTIC
PETROLEUM
CHEMICALS

Philadelphia, Providence, Charlotte, Chicago

In the West
L. H. Butcher Co.

In Canada Naugatuck Chemicals
Division of Dominion Rubber Company, Ltd.

In Europe
Atlantic Chemicals SAB, Antwerp, Belgium

In South America
Atlantic Refining Company of Brazil, Rio de Janeiro

Unilever Profits Increase in 1955

UNILEVER LTD. and Unilever N. V. reported a rise in turnover to £1,514,987,000 in 1955 from £1,437,429,000 in 1954. Consolidated net profits rose to £45,118,000 in 1955 compared with £38,218,000 in 1954.

Capital projects approved for the coming year exceed last year's projects by £8,000,000. They amount to £41,000,000 for 1956. This total includes provision of £1,456,000 for synthetic detergents plant and plant for the production of chemicals for syndets at the following locations: Haubourdin, France; Olten, Switzerland; Mannheim, Germany; Milan, Italy; Boksburg, South Africa; and St. Louis and Baltimore, U. S.

Other projects planned include a soap factory at Aba, Nigeria, (£613,000); the extension of soap factories at Vlaardingen in the Netherlands and at Djakarta and Sourabaya, Indonesia (£433,000); the modernization and extension of a glycerine recovery plant at Sydney, Australia (£242,000); and plant for the treatment of fatty acids at Baesrode, Belgium (£136,000), and at Asnieres, France (£174,000).

Soaps, detergents and toilet preparations sold by Unilever during 1955 amounted to £252,984,000, representing 16 percent of the total turnover. Tonnage wise, detergent sales rose to 1,559,000 tons in 1955 from 1,438,000 tons in 1954. This small increase occurred mainly in the United Kingdom and the less developed countries overseas. All time highs were reported for world sales of "Sunlight," "Lifebuoy," "Lux," "Persil," "Vim" and other established lines. All markets indicated substantial increases in the sale of synthetic detergents. "Sunil," a heavy duty syndet was successfully introduced in Germany during 1955 and joined "Suwa," a lower priced synthetic. Syndet progress in France and Italy was excellent.

In the United States Lever Brothers Co. had been hard put to it to make a modest profit on syndets in 1954. In 1955 "Lux Liquid," a synthetic, became the leader in its class and "Rinso Blue" sales also were improved. In Canada "Lux Liquid" made very good progress.

1955 sales of synthetics in Indonesia and India were excellent and good progress was reported in the Argentine, South Africa, Australia, Ceylon, Malaya, the Philippines, and Thailand. Additional plant was installed in Europe, India, Indonesia, Nigeria, and the Belgian Congo.

Sale of toilet preparations in 1955 showed an increase for the first time since 1952 and profits were substantially better. 1955 brought increased sales of white toothpaste in Germany, Canada, United States, and the United Kingdom, a spectacular rise in turnover of toilet articles in Indonesia, and excellent results in the United Kingdom.

Atkinson's sales were good in Italy; sales of toothpaste and liquid shampoo in Germany were higher; in the U. S. modest profits were reported from sales of white "Pepsodent" but chlorophyll brands of dentifrice declined; white "Pepsodent" sold well in Canada; British sales of "Gibbs S. R. and of "Pepsodent" improved and "Sunsilk" by Gibbs kept its position as the leading liquid shampoo.

New "Kleenwell" waterless hand cleaner was introduced recently by Chicago Sanitary Products Co., Chicago. Designed to remove paint, oil, grease, printing ink, etc. from the hands without use of water, it contains lanolin and hexachlorophene. Packed in can of modern design and having a bright red, white and blue color scheme, product will be distributed in both the industrial and household market.

★

Lamb Joins D&O

James Lamb has joined the technical staff of Dodge & Olcott, Inc., New York, as cosmetic chemist, it was announced last month. He was previously associated with Warner-Hudnut, Inc. In his new post Mr. Lamb does liaison work with the perfume and aerosol laboratories in connection with custom products development.

Rainsford F. Cotton, right, manager of the New York sales office of Victor Chemical Works, Chicago, was one of seven new members inducted recently into the company's 25 Year Club. Presentation of gold, engraved watches was made to the group by Rothe Weigel, left, president of Victor and himself a 25 year veteran of the firm. The Victor 25 year Club now has 186 active members, with more than a quarter of a century service. Heading the list of club members with 59 years of service is August Kochs, Victor's chairman of the board and founder.

Were you to ask us...
. . . to duplicate a natural odor
. . . or to create a new fragrance
. . . or conversely, to mask an odor
We would gladly welcome the challenge

Here are three solutions to your specialty perfuming problems.

HONEYSUCKLE $1.50 per lb. • ROSE HYDROL $2.50 per lb.
MINT CONCENTRATE $3.50 per lb.

The strong, clean fragrance of these new compounds will build greater acceptance for your products.

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Pennsalt Earnings Rise

Pennsylvania Salt Manufacturing Co., Philadelphia, reported in mid-July an increase in sales, net income and share earnings for the first six months of this year, as compared with a year ago. Sales for the six months ending June 30, 1956 totaled $37,118,293, up from $33,906,592 for the first 1955 half. Net income was $2,147,972 and share earnings $1.73 for the half just ended, as against $1,975,766 and $1.59 for the comparable period a year ago.

Second quarter sales were $19,862,226, this year, compared with $18,811,639 in '55; net income was $1,252,810 with share earnings $1.01 in the first six months of '56, an improvement over last year's first half figures of $1,102,117 and 89 cents.

—★—

Long Christmas Weekend

A survey conducted by the Drug, Chemical and Allied Trades Section of the New York Board of Trade among its 400 member companies showed that 50 percent will close all day Monday before Christmas, 25 percent one half day and 13 percent will be open all day.

—★—

Olin Lists Products

Olin Mathieson Chemical Corp., New York, recently published a 20-page booklet listing the products of its industrial chemicals division. Organic inorganic, and specialty chemicals are included and characteristics, grades, containers, and producing points are covered. The booklet is available from the division at Baltimore 3, Md.

—★—

New Millmaster Product

Millmaster Chemical Corp., 295 Madison Avenue, New York, recently announced availability in pilot plant quantities of phosphonitrillic chloride $(PNCL_2)n$. A technical data sheet has been published giving properties and uses of the compound. Suggested applications include uses as a binder for glass, and as a lubricant additive, and as an intermediate for polymers.

Elliott Congleton Retires

Elliott Congleton, bulk sales manager of B. T. Babbitt, Inc., New York, and with the company

Robert L. Kob

for 43 years, retired June 30, it was announced last month. The department, formerly headed by Mr. Congleton and the institutional sales department, of which Robert L. Kob has been in charge, have been combined as the institutional and industrial sales department. Mr. Kob is now sales manager of the newly formed department. He has been with Babbitt since 1954, having previously been with Standard Brands, Inc., New York.

At the same time, Babbitt announced that William B. Harford has joined the company as Mr. Kob's assistant.

Mr. Kob's new department will handle, in addition to the regular line of Babbitt products, aerosols produced by Bostwick Laboratories, Inc., Bridgeport, Conn., for sale through sanitary supply jobbers. Last month it was announced that Babbitt had entered into an agreement to merge with Bostwick and its parent company, Connecticut Chemical Research Corp., Bridgeport. The agreement, which was approved by the boards of directors of all three companies, is subject to approval by stockholders of Babbitt.

★

Raphel to Polak's

Gabriel B. Raphel has joined Polak's Frutal Works, Inc., Middletown, N. Y., it was announced last month. He will work in the firm's perfume laboratories. Mr. Raphel, born and educated in France, arrived in the United States early this year. He has been active in the perfume industry since 1941.

★

Brillo Charged by FTC

Brillo Manufacturing Co., Brooklyn, N. Y., was charged recently by the Federal Trade Commission with acquiring a competitor in violation of the anti-merger law. In July, 1955, Brillo acquired Williams Co., London, O. A commission complaint alleges that this may substantially lessen competition or tend to monopoly in violation of section 7 of the Clayton Act.

In 1954 Brillo accounted for approximately 50 per cent of the sales of household steel wool and 30 percent of the industrial steel wool sales.

The F.T.C. complaint charges that:

Brillo's total sales for 1954 exceeded $11 million. Williams' sales for the same year were over $830,000. It describes Williams as one of the four largest producers of steel wool in the United States.

In the production of industrial steel wool alone, Brillo and the number two manufacturer accounted for 55% of the 1954 market. Williams, now eliminated as a competitive factor, was third with 17% of the market.

In the household field, the complaint continues, Brillo and the number two manufacturer accounted for 90% of all the 1954 sales. The remaining 10% was distributed among the four other producers in the household market with Williams ranking an overall fourth.

Another factor adding to Brillo's increased dominance, the complaint alleges, is the location of the Williams plant in Ohio, making shorter shipping distances to customers in the West, South, and Southwest previously served from the Brooklyn plant. The advantage in lower freight rates varies from $2.50 to $3.00 per 100 pounds of goods. Freight costs, customarily paid by the producer, are a major factor in the industry, the complaint states. By virtue of the acquisition, Brillo may be able to reduce its prices and further increase its dominance, the complaint maintains.

Specifically, the complaint concludes, lessened competition may be effected in such ways as the following:

Competition between Brillo and Williams has been eliminated;

Competition generally may be lessened;

Williams has been permanently eliminated as an independent competitive factor.

Ellis to Polak & Schwarz

Polak & Schwarz, Inc., New York, has appointed Walter B. Ellis assistant to the general manager of

Walter B. Ellis

its western division in Culver City, Calif., it was announced last month by Emanuel Voss, general manager of the division. Mr. Ellis served formerly as western district manager for the Gardena (Calif.) Promat Division of Poor & Co., Waukegan, Ill.

★

Nopco Metasap Booklet

A line of vinyl stabilizers developed by Metasap Chemical Co., Harrison, N. J., is described in a new six-page folder published last month. These stabilizers, offered by Nopco Chemical Co., Metasap's parent organization, are designed to make floor tile compositions, film, sheeting, extrusions and plastisols stable to light and heat exposure. The folder gives descriptive listings of all products in the line and their suggested uses and chemical properties.

★

Felton Shifts Baude

Felton Chemical Co., Brooklyn, N.Y., recently transferred Jean Paul Baude from its Canadian affiliate in Montreal to Brooklyn headquarters. Mr. Baude has been associated with the Felton organization for the past seven years. He gained his initial practical experience in Grasse, France and has been associated with the perfume industry for 23 years.

BRAND B
Dissolved, clear—55 seconds
BRAND C
Dissolved, turbid—71 seconds
BRAND D
Undissolved, turbid—81 seconds
SHEA sodium phosphate granules dissolved completely . . . completely clear . . . in just 38 seconds!

SHEA sodium phosphate granules dissolve faster . . . end lumping problem!

A simple test you can make in a minute proves beyond doubt that Shea's sodium phosphate granules dissolve faster than competitive products.

The reason: the physical form is different.

Shea's granular phosphates are spray-dried. Each granule becomes a tiny air-filled bead. Shea tripoly and tetra granules pour easily, float into solution, dissolve much faster. No lumping problems to cause time delays.

Make your own test. Note the clearer solutions. Observe, too, that Shea granular phosphates are lower in bulk density; higher in sequestering power — and have fewer dusty particles to annoy you and your customers.

Ask for samples today.

Sodium Tripolyphosphate
Tetrasodium Pyrophosphate
Disodium Phosphate
Trisodium Phosphate
Sodium Hexametaphosphate
Phosphoric Acid
Dicalcium Phosphate Feed Grade
Phosphate Feed Solution

SHEA CHEMICAL CORPORATION
Jeffersonville, Indiana • New York 16, New York

New Borax-Potash Set-Up

Merger of United States Potash Co. into Pacific Coast Borax Co. to form the United States Borax

J. F. Corkill

& Chemical Corp. has resulted in a number of executive changes, it was announced last month by J. M. Gerstley, president of the new organization.

The administrative office of the new corporation will be located in Los Angeles in the company's own office building, 630 Shatto Place. P. J. O'Brien will be the vice-president and general manager of the new company with Los Angeles as his headquarters.

The following four operating divisions have been created: Pacific Coast Borax Co. division, which will carry on borax manufacturing and sales in the industrial field under the leadership of J. F. Corkill, who has been appointed vice-president and general manager

D. V. Parker

of this division; United States Potash Co. division which will be responsible for the production and sale of potash under Dean R. Gidney, who has been appointed vice-president and general manager of the division; the 20 Mule Team Products division, which will handle the sales and advertising of household products, including industrial soaps and soap dispensers, manufactured by the new company. D. V. Parker has been appointed vice-president of this division. Finally, the research activities of the new company have also been organized under a separate division of which G. A. Connell will be vice-president and D. S. Taylor, director.

For the time being, the head office of Pacific Coast Borax Co. division will remain at 100 Park Avenue, New York and that of United States Potash Co. division at 30 Rockefeller Plaza, New York. It is planned to locate these divisions together in new premises in New York when suitable arrangements can be effected. The principal office of the 20 Mule Team Products division will be located in Los Angeles in the company's building and the principal office of the research division will be similarly located for the present. Construction of a research center on a five-acre tract of land recently acquired in the vicinity of Anaheim, Calif., has been authorized. This is expected to cost, fully equipped, approximately one million dollars and to be ready for occupancy around March, 1957. Thereafter the principal activities of the research division will be directed from the new research center.

In addition to the above appointments, H. M. Albright, formerly president of United States Potash Co., has been made a special consultant to the new organization. Paul Speer was elected vice-president and legal advisor and N. C. Pearson, vice-president in charge of borax sales in overseas markets. R. F. Steel was elected secretary and treasurer; W. F. Dingley and W. A. Ackerman were appointed assistant secretaries and R. C. Dosta assistant treasurer.

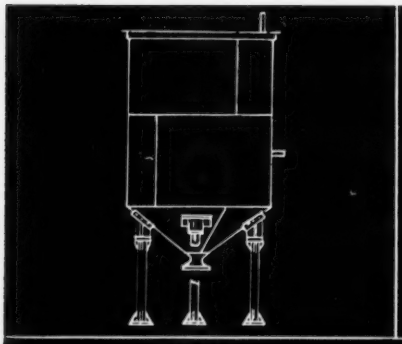
—★—

Three Hooker Appointments

Lewis J. Pentland, Evan E. Graham and Henry B. Puff have been advanced to district sales managers for New York, California, and Chicago, respectively, by the Durez Plastics Division of Hooker Electrochemical Co., Niagara Falls, N.Y., it was announced last month by Robert E. Wilkin, vice-president and director of sales.

Mr. Pentland, with Durez since 1929, was employed in the laboratory of the North Tonawanda plant until 1935 when he transferred to the sales department for New England. Mr. Graham has been a West Coast sales representative for Durez since 1940. Having joined Durez as a chemist in 1946, Mr. Puff transferred to the sales department in 1947, working out of the Chicago office.

Executives and members of the 25 year club of Felton Chemical Co., Brooklyn, gave a testimonial dinner recently to Louis Gambert, retiring vice-president of the firm. Dr. and Mrs. Felton, president and secretary-treasurer, respectively, and members of the 25 year club, attended the dinner, held at Luchow's restaurant, New York. Also present were Alec Lewis, manager of Felton's Montreal branch in Canada, and Miss Jacqueline Lemoine, of Felton's French affiliate in Versailles. Earlier the same day employees of Felton honored him with a farewell cocktail party. Mr. Gampert, seated at the far end of the table, had been connected with the Felton organization for more than 23 years. He served on many trade committees and was president of the Essential Oil Association of the U. S. in 1954 and 1955.



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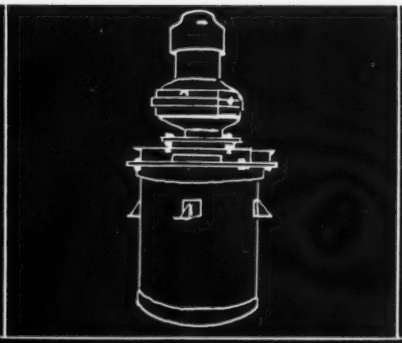

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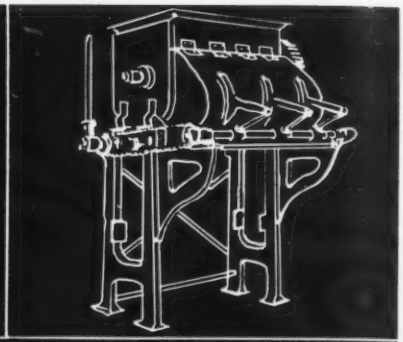

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114 years ago Houchin started producing soap making machines.

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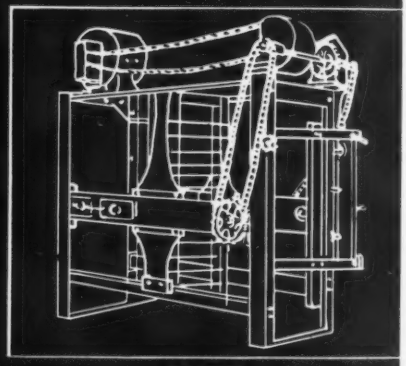
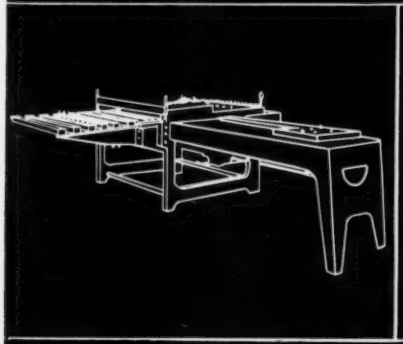
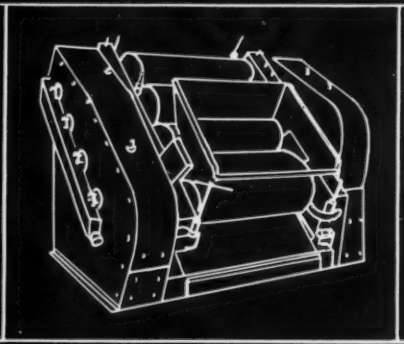


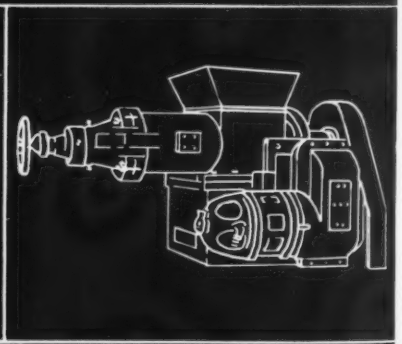
SLABBERS



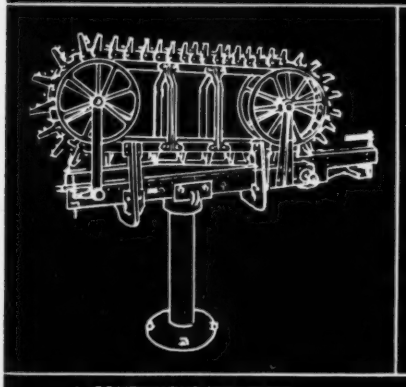
LAUNDRY SOAP CUTTERS



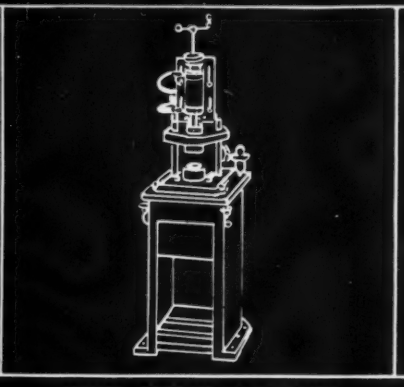
MILLS WITH GRANITE OR CHILLED IRON ROLLS



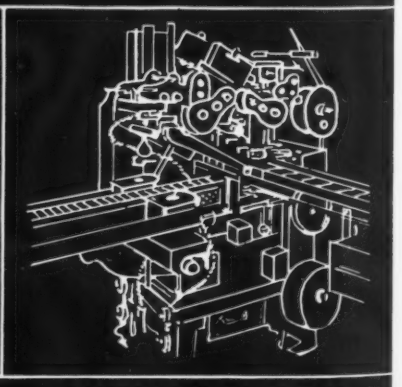
PLODDERS



CONTINUOUS SCRAPLESS ADJUSTABLE TOILET SOAP CUTTERS



PRESSES—FOOT OR AIR OPERATED



WRAPPERS FOR ALL SIZES OF SOAP

HOUCHIN MACHINERY CO., INC. HAWTHORNE, NEW JERSEY, U.S.A.

Cleaning Compound Formulation

CHEMICAL composition of the detergent, mechanical action, temperature, and time are the main factors determining the effectiveness of any washing procedure. Formulation of the detergent must depend on its intended application: household cleaning, commercial laundering, home laundering, etc.; on the nature of the fabric to be laundered, and on nature and heaviness of the soil. Satisfactory directions should be given by the manufacturer and followed by the consumer to regulate temperature and quantity. These elements are especially important in the case of general purpose detergents which contain persalts. Quantity and stabilization of these persalts at the prescribed temperature is balanced to combine maximum whiteness with optimum fiber protection.

These general purpose formulations generally include high percentages of active detergent and phosphates, stabilized perborate and a small amount of soda (sodium carbonate). Sodium sulfate serves not only as an extender but is capable of boosting detergency of the syndet. "Vel", for instance, incorporates 30 percent detergent in the form of monoglyceride sulfates and six to eight percent pyrophosphate. By incorporating alkylaryl sulfates and ethylene oxide condensates such general purpose products can be adapted also to dishwashing.

The old idea of laundry blue is currently having a modern revival. In addition to the new optical brighteners, traditional bluing agents such as ultramarine and indigo carmine are coming back. Modern developments include detergents in bead form achieved by the single phase pressure nozzle process, the perfuming of such products with a pleasant odor such as lilac, and the well balanced formulation of hot and cold water type syndets with an optimum combination of certain polyphosphates.

General Purpose Syndets

A TYPICAL, general purpose, fast acting syndet might be based on the following proportions: combination of various detergents (100 percent active material), 18 to 25 percent; pyrophosphates and polyphosphates, 25 to 30 percent; magnesium silicate, two to three percent; sodium perborate, six to 12 percent; carboxymethylcellulose, three to six percent; optical brightener, 0.02 to 0.03 percent; sodium sulfate, small quantity of soda, perfume and water to make 100.

Products such as "Tide" contain phosphate combinations up to 50 percent and comparatively high percentages of active detergent, about 16 to 20 percent in "Persil D" for instance.

Following are two examples for "rapid" washing compounds: Oleyl-coconut fatty alcohol sulfate (50 percent active detergent) 41 percent; pyrophosphate, 22 percent; hexametaphosphate, five percent; tripolyphosphate, five percent; sodium perborate 12 percent; magnesium silicate, three percent; "Blankophor B" (optical brightener) 0.015 percent; "Blankophor R", 0.010 percent; CMC, six percent; sodium sulfate, five percent; sodium bicarbonate, four percent; perfume, 0.5 to one percent.

If the synthetic detergent materials are well balanced this formula can be used: syndet combination (100 active detergent) 20 percent; tetrasodium pyrophosphate, powder, 20 percent; "Calgon B 5", five percent; sodium perborate, eight percent; magnesium silicate, 2.5 percent; soda calc., 10 percent; carboxymethylcellulose, four percent; "Blankophor BH" extra highly concentrated, 0.02 percent; dry perfume, 0.5 percent; add sodium sulfate and/or water to make 100.

Wool Washing Compounds

FOR the laundering of wool, synthetic detergents are superior to soaps. Absence of alkali, low temperature, complete rinsability, and a minimum of mechanical manipulation are the prerequisites for the successful washing of woolens. These requirements are answered by detergents better than by soaps. Perfuming of the syndet is particularly desirable in this field to combat the unpleasant "mothball" odor in woolen clothes stored during the summer.

Detergents which may be considered for the laundering of woolens include: nonionics; fatty acid/protein condensation products; monoglyceride sulfates, especially those of coconut fatty acid;

Suggested formulations for household soaps and laundering detergents, bar form detergents, window cleaners, car wash products and scouring powders

MECCANICHE MODERNE

CORSO SEMPIONE, 51 — BUSTO ARSIZIO (ITALY)

CHARACTERISTICS OF THE "PISONI SAIX" PLANT

It is the only plant on the market which continuously cools soap with simultaneous extrusion of a continuous bar maintaining unchanged total fatty acids content as determined before cooling.

It comprises one special cooling plodder which, working without any endless screw, can extrude soaps made with fats having a high or low melting point even if containing high percentages of water or builders, namely:

- Pure soaps having 62-63% T.F.M.;
- Soaps having T.F.M. from 35% to 62-63%;
- Soaps having T.F.M. 62-63% with 25-30% rosin;
- Soaps having 56% T.F.M. with 25-30% rosin, filled with silicate or soda carbonate;
- Mixing soaps having 100% cocoanut oil;
- Olive oil foots soaps;
  *—Pure peanut oil soaps.
- Soaps with Phenol;
- Dry, pure or filled, soaps having T.F.M. contents from 35 to 72-74%;
- Transparent laundry or toilet soaps having 72-74% T.F.M.

Savings: Steam, 10% — Labor, 70% — water, 50% — power, 50%.

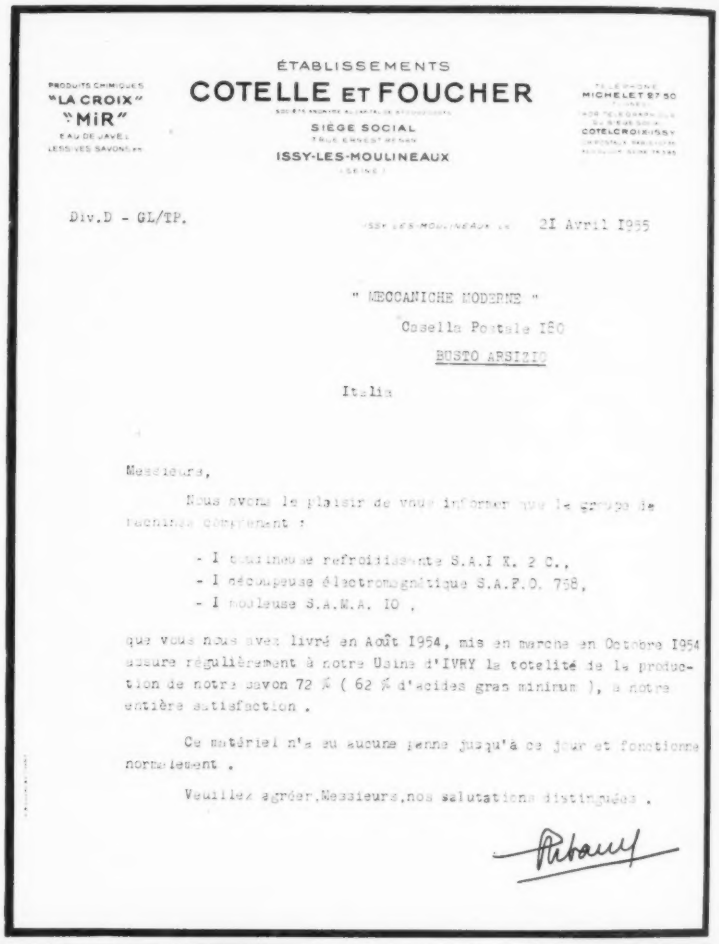
A fully automatic and continuous operation — only one workman to run the plant—small space requirements—absolutely no scraps—automatic perfuming.

By our process foaming capacity is highly increased—cakes undergo no deformation during storage neither moisten package.

These plants are manufactured for the following output capacities: 0.5 — 1 — 2 — 3 tons per hour.
We also manufacture:

Complete plants for pilled toilet soaps — chips — synthetic detergents in beads form.

Free and without any obligation, ask for tenders — references — catalogues — soap samples — plants inspection.



ÉTABLISSEMENTS
COTELLE ET FOUCHER
SIÈGE SOCIAL
ISSY-LES-MOULINEAUX

Div.D - GL/TP. — 21 Avril 1955

" MECCANICHE MODERNE "
Casella Postale 160
BUSTO ARSIZIO
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Messieurs,

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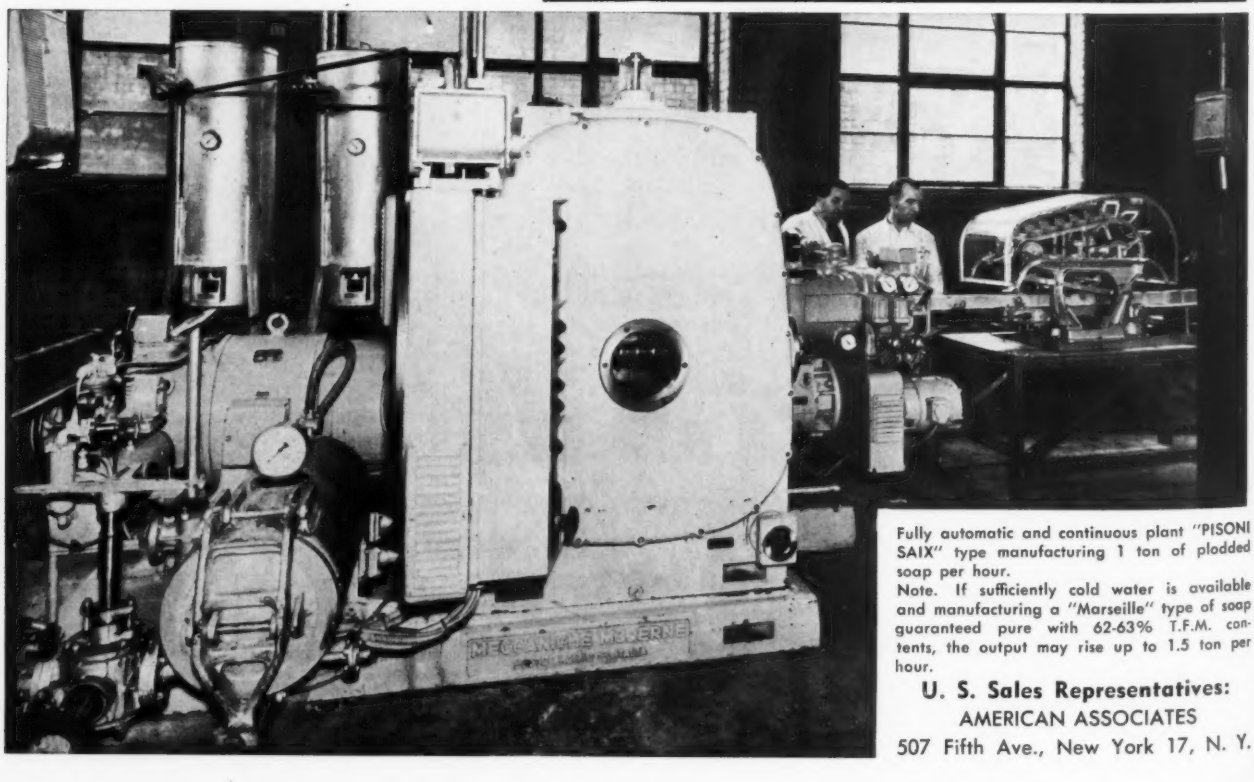
- I découpeuse électromagnétique S.A.P.D. 758,
- I mouleuse S.A.M.A. IO ,

que vous nous avez livré en Août 1954, mis en marche en Octobre 1954 assure régulièrement à notre Usine d'IVRY la totalité de la production de notre savon 72 % (62 % d'acides gras minimum), à notre entière satisfaction .

Ce matériel n'a eu aucune panne jusqu'à ce jour et fonctionne normalement .

Veuillez agréer,Messieurs,nos salutations distinguées .



Fully automatic and continuous plant "PISONI SAIX" type manufacturing 1 ton of plodded soap per hour.
Note. If sufficiently cold water is available and manufacturing a "Marseille" type of soap guaranteed pure with 62-63% T.F.M. contents, the output may rise up to 1.5 ton per hour.

U. S. Sales Representatives:
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507 Fifth Ave., New York 17, N. Y.

and others. Good foaming properties and detergency in cool water makes lauryl sulfate specially suitable for this purpose. Bacteriostatic properties exhibited by lauryl sulfate are another reason in its favor in the lukewarm washing of wool. A combination of C_{12} and C_{14} alcohols produces rapid and dense lather in cold water. However, such lauryl/myristyl blends degrease the wool fiber to a point where inclusion of a superfatting additive becomes desirable.

A formulation specially designed for the washing of wool might include: fatty acid polyglycolate, 30 percent; sodium tripolyphosphate, 35 percent; sodium sulfate, 34.7 percent; and perfume, 0.3 percent.

Small amounts of alkylbenzene sulfonates can be formulated with C_{12}-C_{14} sulfonates having good detergent properties. Following is an example: alkylaryl sulfonate (100 percent active material), 16 percent; oleyl-coconut fatty alcohol sulfate (100 percent active) eight percent; hexametaphosphate (or "Calgon H") 25 percent; sodium sulfate and/or water, 50 percent; dry perfume approximately one percent; optical brightener ("Blankophor WT" or "Tinopal WR") 0.01 percent.

Formulations intended for laundering all-synthetic fibers such as "Nylon" or "Perlon" should be weakly alkaline and incorporate high sudsing detergents. "Nylon" and "Perlon" fabrics tend to draw soil into the fiber due to their typical dissolving powers. Soil particles thus incorporated in the fabric can hardly be removed by detergents and contribute to the yellowing of nylon fabrics. This problem, inherent in white nylon garments, can be partly solved by the use of comparatively large quantities of optical brighteners. But many questions in this field are still to be answered.

Home Washers

A LAUNDRY compound intended for use in a home washing machine must be formulated to answer the following requirements: 1. very high soil carrying capacity, because kettle capacity is usually small and the repeated heating by electricity of the wash liquor is costly and time consuming; 2. high chemical detergency to balance insufficient mechanical washing action which is often lacking in duration and intensity; 3. absence of corrosive effect on the metal parts of the washer; 4. moderate sudsing, because excessive lather impairs washing action and may cause overflowing of the wash liquor.

The traditional three-stage procedure consisting of soaking, washing, and rinsing, works best in domestic laundering by machine. Consequently we should here consider soaking, washing, and rinsing compounds.

When treating clothes soiled with blood and other protein matter, soaking compounds should incorporate enzymatic substances. Pancreatine for instance is one of the enzymes which decomposes proteins and lipoids. The soaking bath should soften the water if used in conjunction with a soap based washing compound, and should generally supplement the short mechanical agitation in the usual pulsator type home washer.

Washing agents based on soap offer the following advantages over syndets for use in the home washer: superior soil carrying capacity, anticorrosive properties (especially important in the presence of silicates), and moderate sudsing. Nonionic ethylene oxide condensation products alone among synthetics exhibit a boosting effect upon the soil carrying capacity of the wash liquor. The drawback of soap is its reaction with the salts causing water hardness. A softening soaking bath can eliminate this drawback at least in part.

The rinsing bath fulfills a threefold purpose: 1. complete removal of all remaining alkali, which, if left, may cause brown discoloration of the clothes in ironing; 2. supplementary bleaching by sodium perborate or optical brightening by incorporation of a comparatively high dose of fluorescent dyes; 3. olfactory improvement of the laundry by presence in the bleaching rinse of fresh clean odor notes.

Soaking Compounds

RECOMMENDED use concentration for soaking agents is four to six grams per liter. Formerly such agents consisted chiefly of soda. A modern soaking bath contains two to three percent active detergent as wetting and dispersing agent, also soil carriers and sometimes bleaching soda.

Following are two formulations for soaking compounds: I. alkylaryl sulfonate (100 percent active) 3.5 percent; CMC powder, two percent; sodium metasilicate pentahydrate, 20 percent; sodium waterglass, powdered, alkaline, 25 percent; calcined soda, 49.5 percent. II. calcined soda, 46 percent; sodium silicate (100 percent) five percent; CMC powder or cellulose glycolate, two percent; syndet (100 percent active) three percent; add sodium sulfate and/or water to make 100. Soaking temperature should be up to 35°C.

A prewash compound has a similar formula: calcined soda, 46 percent; sodium metasilicate pentahydrate, 20 percent; CMC powder or cellulose glycolate, four percent; syndet (100 percent active) four percent; add sodium sulfate and/or water to make 100.

The alkalinity of soda present in soda-waterglass mixtures causes the formation of sodium metasilicate. Modern so-called instant softeners contain considerable quantities of condensed phosphates.

Machine Washing Powders

THE classic soap-based wash powder for use in household washers contains 42 percent fatty acid, is formulated thus: soap powder (about 72 percent fatty acid) 60 percent; polyphosphates (type "Calgon B5") 15 percent; sodium perborate, eight percent; calcined soda, 13 percent; optical brighteners, highly concentrated,

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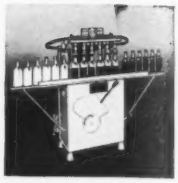

U. S. Model B-49 Straightline Vacuum Filler; the most automatic one-man filler. Available with or without discharge conveyor. For all liquids. Changeover for all types containers. Contact parts stainless steel, or plastics. Write for Bulletin B-49.

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0.2 percent; sodium sulfate, one percent; waterglass, 2.8 percent.

Detergency depends, of course, largely on the fat charge of the soap. A general recipe for a soap-based washpowder suitable for use in home washing machines follows: fatty acid in soap form, 40 percent; calcined soda, 20 percent; tetrasodium pyrophosphate, 15 percent; CMC powder or cellulose glycolate, six percent, sodium silicate (100 percent) 2.5 percent; add sodium sulfate and/or water, optical brightener and perfume to make 100.

While a good soap powder contains 35 to 42 percent fatty acid, the synthetic powders contain usually only 12 to 18 percent wash active substance. Reason for this difference: synthetic detergents begin to act at a concentration of 0.3 to 0.5 gram per liter and have an optimum effect at 1.5 to 1.8 gram per liter (calculated on 100 percent active detergent). Whereas soap reaches its optimum effect at three to four grams of fatty acid per liter.

Syndet-soap combinations for the household washer can be formulated as follows: alkylaryl sulfonate (100 percent active, dodecylbenzol sulfonate) five to seven percent; nonionic syndet (100 percent active, alkylaryl polyglycolether) one to 1.5 percent; fatty alcohol sulfates, 1.5 to two percent; CMC powder or cellulose glycolate, two to three percent; pure soap (sprayed) two to six percent; special phosphate, 10 to 15 percent; waterglass, four to six percent; sodium perborate, six to eight percent; magnesium silicate, two to three percent; optical brightener, 0.01 percent; calcined soda, 40 to 50 percent; add perfume, sodium sulfate and/or water to make 100.

Here are two general basic recipes for home washer formulations: I. alkylaryl sulfonates (100 percent active) 12 percent; pyro and tripolyphosphates, 10 percent; sodium perborate, eight percent; magnesium silicate, two percent; CMC powder or cellulose glycolate, 1.5 percent; perfume, 0.3 percent; optical brightener, 0.02 percent; soda calcined, sodium sulfate to make 100. (Note patents). II. calcined soda, 20 percent; mixture of synthetic 100 percent active alkylaryl sulfonates and fatty alcohol sulfates, 15 percent; CMC powder or cellulose glycolate, 5.5 percent; tetrasodium pyrophosphate, 7.5 percent; tripolyphosphate, 7.5 percent; sodium silicate, 2.5 percent; perfume, 0.3 percent; optical brightener, 0.02 percent; sodium sulfate and/or water to make 100. Formulation II requires rinsing with a bleach-containing rinsing compound.

Rinsing Compounds

RINSING preparations contain only very small quantities of detergent (one half to one percent, 100 percent active), between four and eight percent sodium perborate (usually only lightly stabilized), a comparatively large dose of optical brightener; eight to 25 percent polyphosphates and always a fresh, "clean" perfume. A little soap is added to inhibit sudsing and to give linen a better "feel." Brighteners can represent 0.05 to 0.4 percent of the rinsing preparation. One to two milligrams of brightener per liter of rinse water is a good concentration. Fluorescent brighteners are more advantageously incorporated in the rinse than in the laundering compound. Adsorption of the dye by the fiber is instantaneous in the rinse which contains electrolytes aiding this process. In the actual washing procedure adsorption is balanced by removal of the brightener and a certain state of equilibrium is established.

The rinse is the logical place for incorporation of perfume, which, however, must be stable to perborate. Formulators should avail themselves of the advice of a reputable perfume house.

Formulation of a rinsing compound could be based on the following ingredients: syndet (100 percent active) powerful wetting agent, 0.7 percent; sodium perborate, five percent; polyphosphates ("Calgon W" or others), weakly alkaline, 20 percent; sodium metasilicate pentahydrate, five percent; perfume, 0.5 to two percent; optical brightener ("Blankophor BH" or others), highly concentrated, 0.1 percent; magnesium silicate, 0.5 to one percent; add sodium sulfate, sodium bicarbonate, small amounts of soda and/or water to make 100.

Car Washes

AUTOMOBILE washes can be formulated with diethanolamine lauryl sulfates. A minimum content of unsaponifiable matter and electrolytes is a must for these products. Treatment of the enamel with silicone containing polishes prior to washing is a frequent cause of trouble. The coating left by such polishes impairs the effect of the wash. Nitro-lacquers are particularly sensitive and the brown enamel used on certain makes of cars requires careful treatment.

Window Cleaners

GENERALLY, glass cleaning compounds are designed to be applied without water. A few drops of the product are squirted on the window pane and wiped dry. Compounds in this group are usually formulated with nonionic detergents and rapidly evaporating solvents. Isopropyl alcohol or the even more volatile normal propyl alcohol may be used in conjunction with suitable amounts of ethyl alcohol. Here are two formulations for window cleaning compounds: I. nonionic ethylene oxide condensation products, high concentration, 1.5 percent; propyl alcohol, normal, 20 percent; denatured ethyl alcohol, 0 to 10 percent; distilled water, 58.5 percent; and turquoise blue color, approximately 0.01 percent. II. special syndet, 0.5 percent; propyl alcohol, normal, 15 percent; isopropyl-alcohol, five percent; and 79.5 percent distilled water.

Bar Form Syndets

COMMERCIAL application of synthetic bars is hampered by high cost and, in some instances, comparative harshness to the skin.

C. E. Kaufman (left), Product Development Manager, Calgon, Inc., discusses the properties of the Pluronics with Ralph N. Thompson, Research Manager.

"Pluronics offer a combination of properties not available in any other single surfactant"

—Ralph N. Thompson, Research Manager, Calgon, Inc.

"We manufacture products for treating water from source to disposal," relates Calgon's Research Manager Ralph N. Thompson.

"In our various research activities, we have been, and are now, thoroughly evaluating the Pluronics —Wyandotte's unique series of surface-active agents.

"We have established that the Pluronics have a relationship . . . one grade to another. Consequently, by evaluating the different grades, we've found that combinations of properties can be obtained with Pluronics which are not obtainable in any other single surfactant by itself.

"To date, two of the properties of the Pluronics have been sufficiently unique to enable us to develop one completely new product, as well as to revitalize and improve one of our present important products."

Perhaps *your* products can be improved using a Pluronic.* We at Wyandotte have recently compiled a new "Pluronic Grid," whereon the property trends of the Pluronics are plotted.

By studying these trends, the formulator may select those Pluronic grades with the best balance of properties for his application . . . eliminating random testing, saving valuable research time. This organized approach does not, however, eliminate the need for evaluation of the Pluronics in your own laboratories. Write today for samples and your free "Pluronic Grid." *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in principal cities.*

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Advantages are rapid foaming, regardless of water hardness, and excellent odor properties and lasting fragrance of perfumes incorporated in such products. As early as 1936 Boehme-Fettchemie made synthetic bars based on a urea-formaldhyde compound. The U. S. Navy used synthetic bars which consisted of 50 percent sodium-potassium stearate and 20 to 27 percent fatty alcohol sulfate, superfatting agents (eucerin) and cholesterol. Procter & Gamble tried approximately 50 percent calcium stearate as carrier, 30 percent fatty alcohol sulfate, and two percent cellulose glycolate and superfatting agent.

Other experiments make use of polyacrylic acid, polyethyleneoxide waxes, and polyglycols. These substances, when used in sizable quantities, reduce foam and yield an oily rapidly rinsable soap. Starch as a binder gave negative results because the starch is changed into sugar, changing the shape of the bar. The most suitable superfatting agent is catalytically hydrated wool fat.

Our own experiments yielded a durable homogeneous synthetic bar which handled well to the end and which did not become slimy. Our recipe comprises: potassium-sodium stearate, 50 percent; triethanolamine alkylaryl sulfate (50 percent active) 25 percent; sodium lauryl sulfate (40 percent active), 22 percent; eucerin, 2.7 percent; and perfume, 0.3 percent. Milling is necessary to make a homogeneous bar.

Scouring Powders

SCOURING powders usually contain small amounts of detergent substances, generally 60 to 80 percent powdered pumice or other abrasive material such as quartz powder, 10 to 20 percent soda and/or trisodium phosphate; five to 10 percent ammonium sulfate; 0.3 to one percent synthetic detergent (100 percent active); sometimes they contain ammonia.

Gustav A. Nowak, *Seifen-Oele - Fette - Wachse*, 1956, No. 11, pp. 287-9, and No. 12, pp. 329-30.

Lauryl Ether Sulfates

(*From Page* 50)

appears again in Table VII to be slightly more efficient in hard water than in distilled.

A concentration of only 0.05% sodium lauryl ether sulfate is required for sinking time of approximately 25 seconds in both hard and distilled water. Sodium lauryl sulfate required a concentration of 0.1% for a 25 second sinking time in distilled water and 0.3% in 300 ppm hard water.

Heat Stability

SOLUTIONS of sodium lauryl ether sulfate (30% active) were stored at 65°C for two months and show no discoloration, pH drop, or any other form of decomposition.

Irritation

EYE irritation tests were run by an outside reputable laboratory. Albino rabbits were used as test subjects. Solutions 10% active in sodium lauryl ether sulfate produced no permanent eye injury.

Summary and Conclusion

THE properties of sodium lauryl ether sulfates depend to a large degree on the length of the hydrophilic ether chain.

The following facts were found in this investigation:

1. Viscosities of aqueous solutions decrease with increasing ether chain length. They are very dependent on the sodium chloride and unsulfated ether alcohol content, as well as on the concentration and temperature.
2. Cloud points decrease with increasing ether chain length.
3. Foaming heights reach a maximum at an ether chain length of about 2 to 4, being then very substantially better than sodium lauryl sulfate. Introduction of more than 4 moles of ethylene oxide into the lauryl ether sulfate molecule adversely affects foaming properties.
4. Solutions of this material remain clear in hard and distilled water.
5. Solutions of lauryl ether sulfate have good heat stability characteristics.
6. Dilute solutions of sodium lauryl ether sulfate show surface tension and interfacial tension characteristics which are more similar to those of ethylene oxide alcohol condensates than sodium lauryl sulfate.
7. Dilute solutions of sodium lauryl ether sulfate show excellent wetting characteristics in both hard and distilled water.

References

1. I. G. Farben Ind. A.-G., Schoeller, Conrad, and Wittwer, Max: "Assistants for the textile and related industries." U. S. Patent 1,970,578, Aug. 21, 1934.
2. I. G. Farben Ind. A.-G., "Wetting Agents, etc.," British Patent 463,624, April 2, 1937.
3. Societe Sinnova: "Liquid Surface Active Agents." French Patent 1,079,974.

Table VI.

Ross Miles Foam Test

Concentration	Time in minutes	Dist. H_2O mm of foam	300 PPM Hard H_2O mm of foam
Lauryl Ether Sulfate			
0.04%	0	140	150
0.04%	5	135	150
0.04%	10	135	148
Lauryl Sulfate			
0.04%	0	38	30
0.04%	5	35	23
0.04%	10	33	22

Table VII.

Wetting Time in Seconds

Lauryl Ether Sulfate Concentration	Distilled H_2O	300 PPM Hard H_2O
1.0%	3.6 sec.	2.6 sec.
0.1%	17.0 sec.	14.2 sec.
0.05%	25.8 sec.	26.3 sec.

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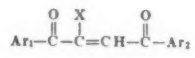
DOW

NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine, Mac Nair-Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be $1.00 per copy.

No. 2,744,874. Detergent Compositions, patented by Elmer A. Fike and William H. Seaton, Nitro, W. Va., assignors to Monsanto Chemical Co. St. Louis, Mo. Described is a detergent composition comprising as an essential active ingredient an alkyl benzene sodium sulfonate wherein the alkyl group contains from 9 to 16 carbon atoms and an effective amount within the range of 0.5%—5% thereof of an oxy alkylene ether of the structure $RO(R_1O)_nH$ where RO is the residue after removal of hydrogen from a carbinol substituted by a nve membered heterocyclic radical containing four carbon atoms and an oxygen atom. R_1 is an alkylene group containing at least 2 but not more than 4 carbon atoms and n is an integer at least 5 but not more than 20.

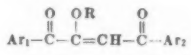
No. 2,731,381. Pesticidal Compositions and Their Use, patented by Jack S. Newcomer, Grand Island, N. Y., assignor by mesne assignments, to Pennsylvania Salt Manufacturing Co., Philadelphia. Covered is a composition prepared for use in combating micro-organisms comprising a surface active agent, and a compound having the formula



wherein each of Ar_1 and Ar_2 represent an aryl radical selected from the group consisting of phenyl, biphenylyl, terphenylyl and naphthyl radicals, said radicals having from 0 to 3 substituents selected from the group consisting of halogen and alkyl radicals containing less than six carbon atoms; and wherein X represents halogen.

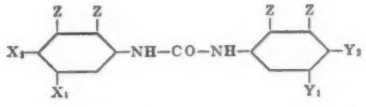
No. 2, 744,922. Method of Soapmaking, patented by Fredrik Teodor Palmqvist, Stockholm, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden. In the art of soapmaking wherein soap is grained out with an aqueous solution of an electrolyte made up at least partly of alkali hydroxide, and is then separated as neat soap from the spent lye, an improvement is disclosed which comprises neutralizing the alkali hydroxide content of the neat soap with an agent selected from the group consisting of bi-valent and poly-valent acids and the acid alkali salts thereof, said neutralizing agent being added in a quantity such as to produce a soap mass in which the neat soap is in phase equilibrium with niger, said neutralizing being carried out with substantially no formation of free niger.

No. 2,749,268. Fungicidal Compositions and Their Use, patented by Jack S. Newcomer, Grand Island, N. Y., assignor, by mesne assignments, to Pennsylvania Salt Manufacturing Co., Philadelphia. The patent discloses a composition prepared for use in combating fungi comprising a surface active agent, and a compound having the formula



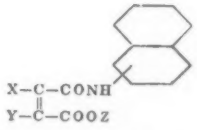
wherein each of Ar_1 and Ar_2 represent an aryl radical selected from the group consisting of phenyl, biphenylyl, terphenylyl and naphthyl radicals, said aryl radicals having from 0 to 3 substituents selected from the group consisting of halogen and alkyl radicals having from 1 to 5 carbon atoms; and wherein R represents an alkyl radical selected from the group consisting of primary and secondary alkyl radicals, having from 1 to 5 carbon atoms, said composition forming an emulsion with water upon agitation therewith.

No. 2,745,874. Insecticidal Derivatives of Diphenyl Urea, patented by Guido Schetty and Walter Stammbach, Basel, and Robert Zinkernagel, Riehen, near Basel, assignors to J. R. Geigy A. G., Basel, Switzerland. A diphenyl urea compound is covered, having the general formula:



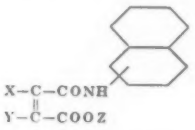
wherein one X represents the trifluoromethyl group and the other X represents a member selected from the group consisting of hydrogen, chlorine and bromine, one Y represents a member selected from the group consisting of chlorine, bromine and the trifluoromethyl group, the other Y represents a member selected from the group consisting of hydrogen, chlorine and bromine and Z represents a member selected from the group consisting of hydrogen, chlorine and bromine.

No. 2,749,269. Fungicidal Compositions Comprising Esters of N-Naphthyl Halo-Maleamic Acids and Methods of Applying, patented by Waldo B. Ligett, Pontiac, Mich., Calvin N. Wolf, New York, N. Y., and Rex D. Closson, Detroit, assignors to Ethyl Corp., New York. Disclosed are fungicidal compositions comprising a relatively inert fungicidal adjuvant as a carrier and as a principal active ingredient a halogenated compound of the formula



wherein X and Y are selected from the group consisting of hydrogen and halogen and at least one of X and Y is halogen, and wherein Z is selected from the class consisting of hydrogen and lower alkyl radicals.

Also covered is a method of combating fungi which comprises treating materials susceptible to attack by fungus organisms with a halogenated compound of the formula



wherein X and Y are selected from the group consisting of hydrogen and halogen and at least one of X and Y is halogen, and wherein Z is selected from the class consisting of hydrogen and lower alkyl radicals.

No. 2,749,315. Toilet Detergent Bar and Process of Preparing Same, patented by Robert Gerald Faier, Omaha, Nebr., assignor to Colgate-Palmolive Co., New York. The patent describes an improved milled toilet detergent in the form of bars or cakes consisting essentially of at least about 50% of anhydrous water-soluble higher fatty acid soaps, and a minor amount of mixed water-soluble synthetic detergents comprising a mixture of higher fatty acid monoglyceride monosulphates and higher fatty acid amide of aminomethane sulphonates in an amount from about 10 to about 45% by weight uniformly dispersed throughout said soap and effective to prevent substantially lime soap precipitation during use as a toilet bar, the ratio of said sulphate to aminosulphonate detergent being from about 4:1 to about 1:4, and about 5 to about 15% moisture.

No. 2,751,357. Water Softening and Detergent Composition and Process of Preparing Same, patented by Frederic Charles Bowman and William Maxwell Ramsey, South Gate, Calif., assignors to Victor Chemical Works, Chicago. This patent deals with a process of preparing a water softener and detergent by the simultaneous production of anhydrous trisodium phosphate, anhydrous tetrasodium pyrophosphate and anhydrous sodium carbonate, comprising the steps of heating at a temperature between 250° and 550° C. a mixture of phosphoric acid, sodium carbonate and water having an analytical ratio

(Turn to Page 85)

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Products and PROCESSES

Improved Skin Cleaner

A skin cleaning paste of claimed mildness is said to result from incorporation of polyethylene glycols (molecular weight approximately 500) in a formulation based on polyvinyl alcohol, water and solvents. Directions for making the product include: 18 parts of polyvinyl alcohol of medium viscosity are mechanically mixed with 20 parts of a solvent or blend of solvents in which three parts of polyethylene glycol (molecular weight 200) and seven parts of polyethylene glycol (molecular weight 1000) have previously been dissolved. This mixture can be slightly heated and 40 or more parts of water worked into it. A white and stable creme is said to result which does not separate at temperatures up to 50°C.

Polyglycols are neutral, odorless, non-irritating to the skin for which they exhibit good affinity. Inclusion of these compounds in the well known polyvinyl alcohol based formulations enhances their dermatological properties and expands the scope of their usefulness.

The product is suited for filling into tubes and other plastic containers, is said to be economical in use and effective in the cleaning of hands and other parts of the skin. It may be used on any object where cleaning with soap and water or with a synthetic detergent is contrindicated. German patent 933,777, Siegfried Heide, Metzingen, Wuertt., Germany.

★

New Alkanolamine

A new water-soluble alkanolamine was introduced recently by Visco Products Co., Houston. Monohydroxyethyltrihydroxypropylethylenediamine is a viscous light amber liquid, said to have no appreciable odor. Its use is suggested as an intermediate for surface active agents, insecticides and other products. Reaction products with simple and mixed esters of fatty acids exhibit properties desirable in certain detergents and emulsifiers. The new alkanolamine is available in commercial quantities. Laboratory samples will be sent on request to Visco Products Co., 2600 Nottingham at Kirby, Houston 5, Tex.

★

Fatty Acid Chromatography

Principal methods employed in the chromatographic separation of fatty acids include: elution analysis, frontal and displacement analysis, column partition, reversed phase and paper partition chromatography, and paper electrophoresis. 76 references are given. G. R. Whalley, *Soap, Perfumery and Cosmetics*, July 1956, pp. 783-9.

★

Soap from Seal Oil

A soap can be obtained from seal oil which has been treated as follows: raw or refined seal oil is heated for four hours at 525° F. This causes polymerization and lowering of the iodine value of the oil from 145 to about 90. Viscosity of the oil increases and it becomes suitable for use in making a firm soap by the home method. The rate of polymerization was found to decrease with time. L. C. Dugal and A. Laframboise, *Fisheries Research Board Can., Progress Reports, Atlantic Coast Stations*, No. 59, 27-31, 1954, through *Chem. Abstracts*, vol. 49, p. 16473.

★

Sisal Wax in Polishes

Sisal wax from Kenya was tried as a substitute for carnauba in various types of polish formulations. Gloss and gel properties were found to resemble those of carnauba wax but emulsification presented some difficulties. The sample used had melting point 85.5°, saponification number 155, hardness 95-98 (British Standard degrees), hydrocarbon content one percent, and solubility in 70 percent ethyl alcohol 4.3 percent. W. D. Raymond, E. F. J. Thorpe and J. B. Ward, *Colonial Plant and Animal Products* (London) 5, No. 1, 58-61, 1955. Through *Chem. Abstracts*, vol. 50, p. 587.

★

Vaporized BHC

An insecticide based on benzene hexachloride is vaporized by a burning pyrotechnic composition without impairment of its insecticidal properties. The following formulations are suggested: potassium chlorate, 25 parts; hydrated lactose, nine parts; manganese dioxide, one part; ammonium chloride, 50 parts; and BHC, 15 parts; or potassium chlorate, 25 parts; lactose, 25 parts; colophony, 25 parts; and BHC, 25 parts. French patent 986,893, 1951, Etabl. Ruggieri and Jean M. F. D. Florentin.

Optical Brighteners

(*From Page* 39)

appearance of the bar. Unlike methyl umbelliferone, which has been used in toilet soap, "Tinopal" GS is unaffected by alkalinity. "Tinopal" RBS and "Tinopal" 4BM Conc. have a brightening effect on detergent powders, although the trend to coloring detergent products may lessen the significance of this effect.

In conclusion, it may be worth noting that the use of brighteners in detergent products has probably heralded a new phase in the development of the soap industry. Up to the time of their introduction, soaps and detergents were concerned with removing soil from fabrics. Now that the technical problems of soil removal have been reasonably well solved, the problems of upgrading fabrics may be squarely faced. Fluorescent dyes may perhaps claim to be the first step in a new direction. What may follow will probably include antisoils, bacteriostats, softeners, antistatics. Not the least of the benefits derived from brighteners is the demonstration that fabric finishing by detergents is possible.

Cosmetic Elegance Gives Shampoo

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Du Pont DUPONOL* EP gives your clear liquid shampoo true cosmetic elegance

COSMETIC ELEGANCE—This fine detergent gives your formulation a clear, pale golden color that has the appearance of a fine cosmetic product. And it won't fade or discolor on display.

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PRODUCTION Clinic

By E. G. Thomssen, Ph.D.

A DISAGREEABLE problem with which anyone connected with production has to contend at some time or other is alcoholism. It has been estimated that problem drinking in U. S. industry costs over a billion dollars per year in accidents, waste, absenteeism and loss of skilled workers. It is a problem which is frequently referred to as "hidden" because fellow employees will cover up for the offending one. Production men are reluctant to admit that the alcoholic is troublesome, but the fact remains it is one that comes up every so often whether fifty or a thousand workers are employed.

The first inclination of the boss is to fire the drunk as a nuisance. This plan was generally followed years ago. Today a different viewpoint is taken. The tendency is to rehabilitate and salvage the problem drinker if at all possible. Alcoholism is treated as a sickness and not as a weakness.

Those who specialize in the rehabilitation work of alcoholics state that a study shows an average of 10 percent of working time is lost, through absenteeism, by heavy drinkers. After a rehabilitation program is instituted, the average has fallen as low as three percent. It has been quite generally proven then that it pays to help employees who drink too much. In many cases they are valuable workers when sober.

One of the first moves to make in aiding the heavy drinker is to ascertain the cause. This is not necessarily within the scope of the foreman or plant manager. Nor is it most effectively carried out by religious leaders. It is better accomplished by a counselor who is tactful. Larger companies have gone so far as to set up a special branch in their labor relations division to handle problem drinkers.

Among the causes for excessive drinking are family troubles, worry regarding finances and poor living conditions. Poor health is often associated with drunkenness. Hospital treatment has resulted in curing it quite often. Wise counselors have been successful in curing other cases through visits to the homes and by giving financial advice as well as aiding with loans.

I am intimately acquainted with the excellent work done in a plant by a rehabilitated drinker. This man was above the average in intelligence and an excellent foreman when sober. One of his fellow employees advised him to contact Alcoholics Anonymous when he expressed a desire to quit drinking. He responded to this advice and, as far as I know, has never returned to his former habits. I had a number of heart to heart talks with the man. He informed me that in his opinion most alcoholics are neurotics. In his case he had contracted a disastrous marriage, had been divorced and was required to pay heavy alimony to support his wife and child. Besides this, he was burdened with the cost of running the home of his aged father and mother. Later we appointed this man as counselor to other problem drinkers. It was amazing what he accomplished even though his own financial problems continued for a period of years. At least ten persons, men and women, were put on the right road by his efforts and because he knew how to handle the problem through personal experiences.

Dr. E. G. Thomssen

Studies of alcoholism have shown that excessive drinking sometimes is caused by a diet deficiency or some other pathological condition. In such cases outside medical treatment of the proper type effects a cure. It has also been found that when there is no obvious medical or personal reason for the excessive imbibing, the patient should undergo psychiatric treatments. A change in recreation activities and shifting of work have proven helpful.

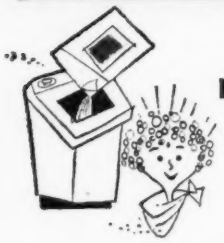
The attitude of fellow workers toward the problem drinker is of importance. Many will ridicule or joke with the drinker. Others will promote further indulgence by inviting him for a drink after working hours. In other cases the uninitiated will try to discipline or counsel the drinker with poor results. These methods are futile. Plant managers should instruct all supervisory workers that they must help the drinker constructively. The only way to do this is to refer him and if possible conduct him to an intelligent counselor or sympathetic physician.

It is encouraging to know that industry is approaching this problem of alcoholism seriously and constructively. Many an able, experienced worker who might otherwise be lost is being rehabilitated through a constructive rehabilitation program for alcoholics.

Rubber Tubing Expander

AN expander for connecting rubber tubing to glass tubing without the use of a lubricant is offered by Arthur H. Thomas Co., Philadelphia 5, Pa. The rubber tubing may be stretched readily by inserting the tines of the stretcher into the end of the tubing and squeezing the stretcher's handles to the desired width for insertion of the glass tubing. The tines are then

STEPAN AMIDES



LIPA

A 100% active, fatty acid alkylolamide, nonionic in character. It is a light ivory color, waxy solid, with a mild, pleasant odor. LIPA is a superb foam stabilizer and also a good auxiliary detergent when used with fatty alcohol sulfates and/or alkyl aryl sulfonates. It is recommended for use in heavy duty laundry detergents, creme shampoos, rug shampoos and detergent hand cleaners.

LDA

A special 100% active fatty acid alkylolamide (a diethanolamide condensate with a very pure grade lauric acid). It is nonionic in character. LDA is a splendid foam stabilizer for liquid dishwashing detergents. It is also an excellent wetting, foaming and thickening agent as well as a good detergent and emulsifier. Recommended too, for shampoos, hand cleaners, and for use in hard surface cleaners.

T6-A T6-B

Both products are alkanolamides, 100% active and nonionic in character. T6-A is recommended for use in bubble bath preparations for its fine foam stabilizing in the presence of soap. T6-B is recommended for use in clear and lotion type shampoos as a good thickening agent and auxiliary detergent with some emollient action.

HDA-7

A heavy duty alkanolamide with a built-in coupling agent which permits a very high phosphate tolerance (as much as 11% on an anhydrous basis). Here is the product to investigate if you are looking for a heavy duty all-purpose hard surface cleaner with a lot of punch. Does an excellent job of wax stripping without harmful effect on floor.

ADT

A low sudsing, special, 100% active fatty acid alkanolamide. It is nonionic in character. ADT is highly recommended for use in formulating liquid scrub soaps. Among its advantages, it can eliminate the use of a coupling agent, has high viscosity and performs unusually well in hard water.

S-86

A 100% active alkanolamide. Essentially nonionic in character with good alkaline stability. Specially recommended for use in textile scouring, dye leveling and similar applications. S-86 provides good detergency for both cotton and wool. S-86, in addition, also offers some advantages for use as a stabilizer and thickener.

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retracted. The stretcher, though a very convenient piece of laboratory equipment, will not work on heavy walled tubing such as vacuum or plastic tubing.

Multiple Liquid Filler

THE Arthur Colton division of Snyder Tool & Engineering Co., Detroit 7, Mich., manufacture a fast accurate, versatile liquid filler. Among its features are speeds up to 480 per minute with accuracy of less than one percent, fills any type of liquid without dripping, adjustable for any height or width container, easy and quick to adjust, and rapidly disassembled for cleaning and sterilizing.

Precision Scales

DETECTO SCALES, INC., Brooklyn 5, N. Y., offers weighing equipment that has values that recommend its use. Models are available for every industrial need from 1/100 oz. up to 50 tons. Detecto scales are made of all steel with a lever system that assures longer, trouble-free usage. An outboard bearing design prevents the platform type from tipping. The dial capacity of the tare and weight beams is increased to a capacity of 125 percent so that greater gross weighings may be made with fewer dial gradations. The company's catalog #651 describes their full line of scales.

Motor Protectors

MOTOR failures caused by burn-outs are reduced up to 90 percent by the use of Klixon Motor Protectors. They are valuable for repaired motors as well. An interesting, informative booklet regarding this and other items may be had free from Metals & Control Corporation, Amsboro, Mass.

Emulsion Stabilizer

WATER emulsions of various types may be stabilized with "Ben-A-Gel," made by National Lead Company, New York 6. It may also be used in particle suspended products and as a thickening agent. Among the preparations in which it has been found of value are oil and water emulsions, shoe polishes and wax cleaner polishes.

Staplers

QUICK, easy shipping carton closing is possible by the use of staplers. The use of staples on seams, tops and bottoms strengthens cartons. This is but one use of stapling equipment around the plant. Bags, freight bills, labels and some mailing operations may be handled more rapidly with staplers. Bostitch, Westerly, R. I., makes over 800 different models of staplers that handle 200 types of staples. They have available a booklet to illustrate the use of staples in the shipping room and will send an expert on stapling to interested users.

Vacuum Filters

U. S. STONEWARE CO., Akron 9, Ohio, offers simple, easy-cleaning, porcelain vacuum filters. These filters are versatile, non-absorbent and are inert to almost all chemicals and solvents. Bulletin F-40 fully describes them.

Chemical Preservatives

"PARASEPTS," made by Heyden Chemical Corp., New York 17, have long been used to prevent spoilage in various products. Bacteria and molds are known to attack and deteriorate preparations containing gums, waxes, fats and oils. A small addition of "Parasepts," which are odorless, neutral esters, assures stability and are well worth any extra cost. Pure and technical grades are available. Samples and full information as to their use are available.

Automatic Batch Controls

WALLACE & TIERNAN, INC., Belleville 9, N. J., offer "Merchen" feeders and meters for automatic batch control and continuous blending. They guarantee accuracy by weight of up to one percent, and in capacities of from three to three thousand pounds per minute. A bulletin covering the use of this equipment may be had upon written request.

New Patents

(*From Page* 79)

of $Na_2O:P_2O_5$ within the range of 2.0 to 5.1 for a sufficient length of time to produce a homogenous white, friable and coarse product consisting of anhydrous trisodium phosphate, anhydrous tetrasodium pyrophosphate and anhydrous sodium carbonate in intimate mixture.

No. 2,751,328. Toothpaste Process, patented by Judson H. Sanders, Wyoming, O., assignor to Procter & Gamble Co., Cincinnati. The patent reveals a process for producing a homogeneous paste-like product, the essential ingredients of which include a hydrophilic colloidal carbohydrate binder, insoluble non-colloid solid matter, aqueous liquid, and substantially non-aqueous but substantially water miscible liquid, without the use of heavy-duty mixing equipment, which process comprises blending said binder in dry, comminuted unhydrated form with said substantially non-aqueous but water-miscible liquid to form a mobile slurry, then blending said slurry and the remainder of said ingredients to form a homogeneous mixed mass, all prior to substantial hydration of gelation of the binder, then maintaining the said homogeneous mixed mass under mild agitation to prevent separation of ingredients until gelation and consequently stabilization has occurred, and thereafter discontinuing said agitation.

No. 2,751,358. Non-Foaming Detergents, patented by Maximilian Caviet, The Hague, Netherlands, assignor to Shell Development Co., San Francisco. A detergent composition is described comprising an aqueous solution of a mixture of sodium salts of secondary alkyl sulfates wherein the alkyl groups contain from 10 to 18 carbon atoms produced by neutralizing sulfation products of a C_{10}-C_{18} alkene fraction together with a suspension in a substantially water-immiscible liquid hydrocarbon boiling above 100° C. of a N,N'-diacyl polymethylene diamide wherein the acyl groups are aryl groups of higher fatty acids having from 12 to 18 carbon atoms and the polymethylene group contains from 2 to 6 carbon atoms, said suspension containing about 0.05 to about 10% by weight of said diamide based on the weight of said liquid hydrocarbon and said polyamide being present in an amount of 1 to 500 p. p. m. of said aqueous solution.

No. 2,749,314. Antiseptic Soap Composition, patented by David J. Beaver, Richmond Heights, Roland S. Shumard, Brentwood, and Paul J. Stoffel, Florissant, Mo., assignors to Monsanto Chemical Co., St. Louis, Mo. An antiseptic detergent composition is patented comprising the combination of a detergent soap and 1 to 3% by weight based upon the detergent soap of 4-chloro-a,a'-bis(2-hydroxy - 3-chloro-5-methylphenyl)-2,6-xylenol.

The **ACTION** of **DETERGENTS**

The **ATTRACTION** of vinyl **TOYS**

are outstanding when you use Enjay Oxo Alcohols

The modern miracles of detergents with their super-cleaning action and vinyl toys with their colorful attractiveness may seem wholly unrelated. But Enjay plays an important part in creating *both* of these products: many detergents are made with Enjay Tridecyl Alcohol and many of the new vinyl products are made from plasticizers formulated with Enjay Isooctyl and Decyl Alcohols.

Manufacturers who call on Enjay—the world's largest source of Oxo Alcohols—for their alcohols know that they can count on consistent quality, dependable supply.

If *you* have new-product problems related to the application of any Enjay petrochemical, our veteran research staff and the complete facilities of the new Enjay Laboratories are at your service. Just write or call!

Enjay offers a diversified line of petrochemicals for industry:

HIGHER OXO ALCOHOLS (Isooctyl Alcohol, Decyl Alcohol, Tridecyl Alcohol); LOWER ALCOHOLS (Isopropyl Alcohol, Ethyl Alcohol, Secondary Butyl Alcohol); and a varied line of OLEFINS AND DIOLEFINS, AROMATICS, KETONES AND SOLVENTS.

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SOAP PLANT Observer

By John W. McCutcheon

A FEW DAYS ago two rather bulky technical information reports came to the writer from a private corporation embodying a literature survey on the use and application of a certain type product that this company manufactures. They were sent to the writer because he had asked a few questions concerning this product and the company no doubt felt that these reports might be helpful. They were, and the writer acknowledged this additional help.

However, the great impact on the writer was the vast duplication of effort being made by industry,—the detergent industry in particular,—to keep abreast of developments.

The report, mentioned above, attempted to classify and index all pertinent information on the subject in question. Patents particularly were referred to and abstracts made which in many cases were verbatim transcripts of *Chemical Abstracts*.

Now what useful purpose does such a report serve? First, the data is collected all under one cover. Secondly, the data on the subject is classified according to the writer's concepts. Both points do serve a useful purpose. The report would be the starting point for research development. No chemistry is involved in its preparation, other than simple classification. The duplication of such a report would require only skilled librarian help plus stenographic and duplicating services. The cost, exclusive of company overhead, would run probably $2000. Duplicate this report for five hundred companies interested in this product and you have a million dollar library bill. For the value resulting from such reports, they could more easily be obtained from a central clearing house for literature. The writer is

waiting patiently for the chemists to quit arguing about methods of classification and get down to a factual system that will be of some use to us *now*. The equipment for the job is already here.

Technical reports of the nature of that cited above have their value. But such reports should not be confused with those technical reports which analyse the data and draw a conclusion. There is a tremendous difference between saying that Joe Doak's patent says so and so and saying that Joe Doak's patent isn't worth the paper it is written on. Yet, a lot of people are impressed by tabulated data and references on the assumption that each tabulation is so much useful information. It is the strong feeling here, that insufficient attention is paid to short review articles occurring in the trade journals. The writer generally is asked to contribute such articles. Often he is a key technical man, not too experienced in double talk, with the result that he often winds up saying something important. Don't overlook this type of paper.

Also, a word about transcribed chemical abstract references (as the company technical reports often are). The very fact that the abstract has been re-transcribed gives it an air of importance that is more fiction than fact. In 99 percent of the cases, the abstract appears, not because it is important but merely because the reviewer isn't geared to leave it out. His opinion doesn't enter the case at all. Now the writer has the greatest opinion for *Chemical Abstracts* and has said so in this column many times before. However, there is one thing with which the writer does not agree. That is the attempt of *Chemical Abstracts* to insert all factual information into the abstract itself. This is an idealistic objective but not too practical because the reviewer is not, and cannot be paid enough to do justice to the job.

The writer once did some abstracting on the chemical patents and found himself on many an occasion spending hours studying a patent to make a ten line abstract worth a few cents. For this reason, it is almost imperative that the few patents really necessary for the start of an investigation be studied in their entirety.

Trade journals including *Soap & Chemical Specialties* make abstracts of important patents which generally are more helpful even than *Chemical Abstracts* inasmuch as the abstractor has more leeway in his report and usually writes the abstract with the intention of stating its purpose and idea even at the expense of giving the data. This shortens the abstract and makes it easier to understand. Unfortunately the wide coverage and indexing system of *Chemical Abstracts* is lacking.

Now what have we implied from all the above? Let's see! (1) Quit duplicating technical data reports. They look nice, are impressive but cost more than they are worth in most cases. Classified reference lists would be just as suitable. (2) Strive to encourage a central literature clearing house within the detergent industry to avoid duplicating common reports. For example, see the "Iodine" series published by the Chilean Iodine Educational Bureau, Inc. or the

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with its unique degerming and antiseptic action, was the key to increased sales and broadened markets *for all these products:*

SOAPS

Waterless Hand Cleaners
Detergents
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Deodorant
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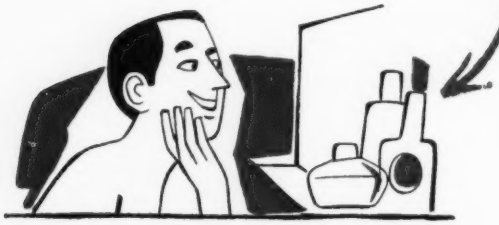
Surgical Scrub
Medicated



PHARMACEUTICALS

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Diaper Rash Preparations
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COSMETICS

Deodorant Creams
Deodorant Sticks
Deodorant Colognes
Deodorant Powder
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Baby Powders
Hand Lotions
Face Creams
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Perhaps G-11 is exactly what *your* product needs to give it a competitive advantage in your markets. Sindar invites you to phone, wire or write for full information.

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tall oil abstract series of the Tall Oil Association. (3) Pay more attention to short review articles for "opinions" and remember that patents are sometimes written to confuse!

By the way, we should not overlook the very valuable yearly literature survey by the Literature Review Committee of the American Oil Chemists' Society. This has been appearing for 22 years and it is really a classified listing of references! Last review appeared in the May and June issues of the *Journal of the American Oil Chemists' Society*.

A RECENT review in the British journal (*Soap, Perfumery and Cosmetics*) on methods of manufacture, speaks of the use of the German soap refiner called the "Strangpilator" as a device for producing soap in needle form for quick dissolving, handy use.

The writer does not believe there is any similar product on the American market, although doubtless thoughts along that line have come up. As far back as 1940 the writer noted the fine hair like trimmings from the soap drier roll and wondered if production methods might not make such a product. At the time, the writer was with a company that made a specialty of novel forms of soap. The idea was abandoned on the grounds that production costs would be high and package density too low.

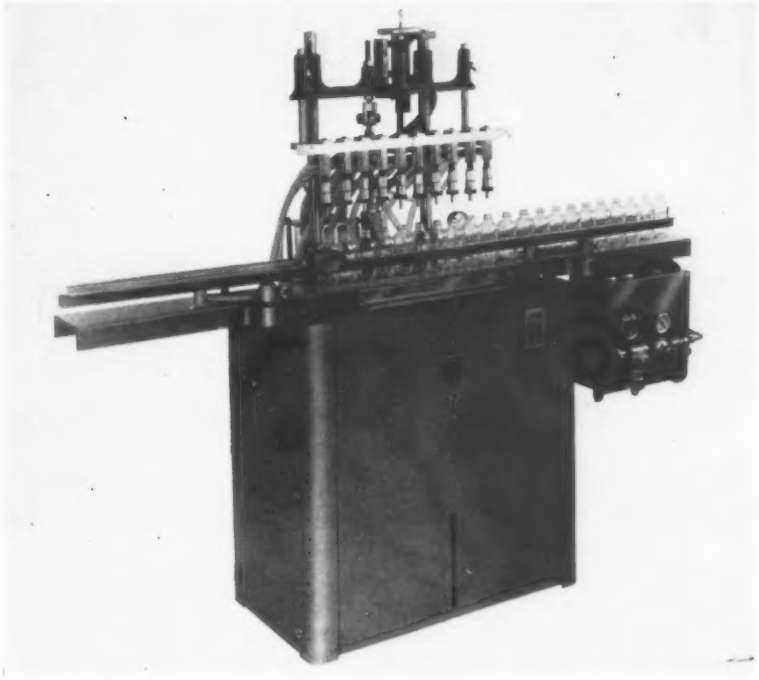
The "Strangpilator," however, has overcome the cost objection and has introduced a new factor which may have sales appeal, namely the conversion of the soap under high pressure to a more soluble phase form. The review in *S.P.C.* states that the needles have a smooth shiny appearance which makes for easy dispensing. Yes, the writer thinks this is a good idea. Perhaps some English friend might send us a package!

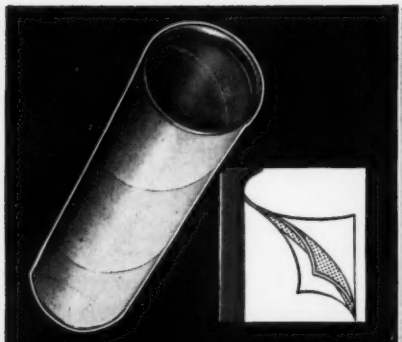
The "Strangpilator" itself is described by H. Zilske in the March issue of *S.P.C.* There is some sales talk, of course, in the article, and a few remarks have to be salted away. The machine is a high pressure vacuum double plodder controllable through a speed reducing gear and by means of a regulated clearance between the upper worm and its casing. There is no question that the increased available pressure over standard plodders will enable the satisfactory handling of materials that would give difficulty, such, for example, as high electrolyte toilet soaps. The writer mentions 0.6 percent salt content. Of course, normal plodders handle up to 0.5 percent regularly. One point much bandied around, is the statement that high pressures transform soaps into a more soluble and plastic form. Data both here and abroad confirm this as a fact. However, there is little data available on how long this effect lasts. It is well known many chemicals can exist in labile forms when produced under unusual circumstances. These all have a tendency to revert back to the stable form in time, the rate of change being dependent on physical state, etc. In a soap bar does the labile form exist for two days, six months or a year? Mr. Zilske is rather conservative on this point. He says the plasticity of the soap allows it to be stamped hours afterwards without incurring the danger of surface cracks. The greatest potential use of the "Strangpilator" in the writer's opinion has not been mentioned – namely as a device for synthetic detergent bar production. This should be a three hundred million pound a year business within five years!

Along with the above anyone contemplating the purchase of a "Strangpilator" should investigate the Marshall shredder, manufactured at Savage, Minnesota. There are quite a few striking similarities between the two machines.

Perl Redesigns Fillers

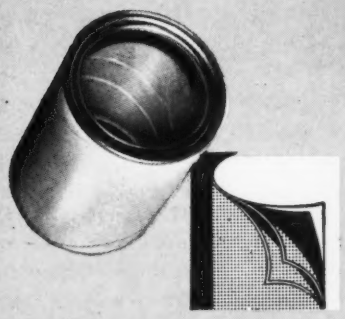
Perl Machine Manufacturing Co., 68 Jay Street, Brooklyn 1, N. Y., has redesigned its line of straight line bottle and can fillers, it was announced last month. The lower part of each machine has been enclosed in a wrinkle finish cabinet which is said to combine easy access for maintenance with protection of the motor and vacuum pump for greater safety. In addition, all controls have been placed in the front of each machine for easier accessibility. The firm's liquid filling machines handle containers ranging from one ounce to five gallons capacity.

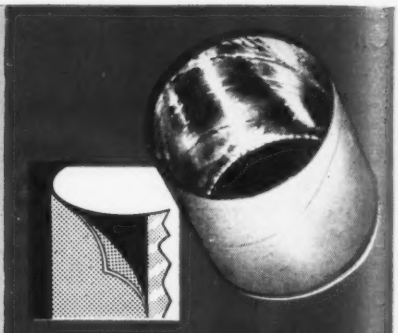




LARDPAK LINER.
Lardpak liner inside, then fibre, and printed Lardpak paper used outside. A grease barrier for scores of materials. Example of use: caulking compounds.

LARDPAK, PITCH-BACKED.
This combination offers the packer both grease and moisture resistance. Example of use: various chemicals.



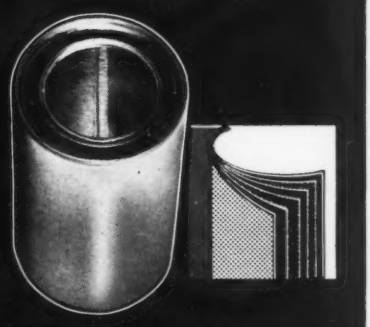


FOIL LINER.
Foil backed by pitch followed by two layers of fibre laminated with glue. Pitch serves two purposes: As adhesive for foil (2) sealer for pin holes in foil. Example of use: food innoculants.

• There are many sides

to the R. C. FIBRE CAN Packaging Story

• a complete line to fit your packaging needs

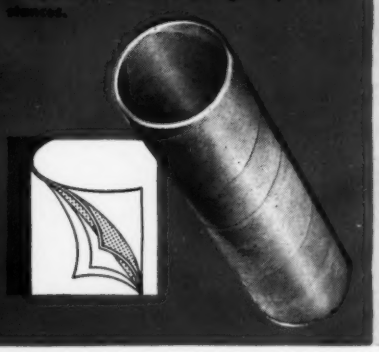


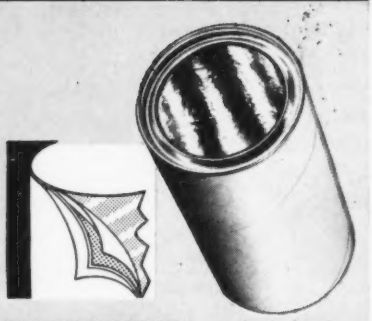
CHIP KB.
Pitch layers between layers of fibre, for moisture resistance. Convolute can shown here. Example of use: wallpaper cleaner, cold water paints.

Have You a Fibre Can Packaging Problem?
Contact your nearest R. C. Sales Office for experienced advice. There's no obligation.

PARAFFIN COATING.
Parrafin lining obtained two ways: spiral wound from coated fibre, or sprayed in convolute can. Example of use: moth crystals, drugs, etc.

LAMINATED KLEERWRAP.
Lardpak liner inside, followed by fibre, followed by two pieces of glassine laminated together with wax. High grease and moisture resistance. Example of use: caulking compounds and similar "greasy" substances.





FOIL PAPER-BACKED.
Foil backed up by 20 lb. white bond paper, which serves as inside ply of container. Ideal for packaging that requires both moisture and grease resistance. Example of use: ready-to-heat biscuits, and similar food products.

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Packaging....

AEROSOLS · LIQUIDS · PASTES · POWDERS

Unusual new plastic-coated paper containers designed by Seabright Co., Fulton, N. Y., have been selected by Bitt Chemicals, Inc., Watertown, N. Y., to merchandise its automobile soap. Printed with red, yellow, and blue motif on one side and product use information on the other side, this container is designed to make display impact wherever it is shown. Easy-to-remove and replace covers suggest this container for storage use around the workshop.

Automotive Chemicals
Cleaners
Detergents
Deodorants
Disinfectants
Floor Products
Insecticides
Laundry Bleach
Metal Cleaners
Moth Products
Polishes
Shampoos
Shave Products
Soaps
Liquid Starch
Toiletries
and other
Chemical Specialties

A market for over 20 billion packages annually

1 **Aerosol Packaging Increases Number of Users!**

2 **Aerosol Products Are Used More Frequently!**

Market Your Products -Get a 4-WAY

From retail stores across America comes the answer to why so many "sleeper" products suddenly are best sellers when packaged as aerosols: *they get a four-way sales boost!*

A recent survey* of leading cosmetic and fragrance manufacturers reveals that increased sales and an expansion of markets result repeatedly with the change to aerosol packaging.

Here's what they are saying:

"Our new aerosol cologne is being used in ways and by people we could never sell before," one enthusiastic manufacturer reported.

"There's less time between repeat purchases" said another. "Women use our aerosol package more often than they used the same product in liquid form," a third reported.

All this means just one thing to smart marketers—you're missing today's best bet for stimulating sales if you haven't considered aerosol packaging for your product. Last year's 240-million-unit aerosol sales are proof of that.

*Conducted by a leading drug and cosmetic trade magazine

If you have products that can be sprayed, brushed on, dusted or daubed, the revolutionary aerosol packaging technique may offer you a tremendous potential for profit. Investigate now while the field is still increasing and merchants are eager to feature anything new in aerosols.

3 **Aerosol Products Are Used More Freely Each Time!**

4 **Aerosol Products Are Used in New Ways!**

as Aerosols

SALES BOOST!

Here's Free Help!

If you want technical guidance in developing the right propellant and formulation for your product, see General Chemical. If you want information on aerosol containers, valves, packaging equipment, contract fillers, you can get it from General Chemical. As the producer of "Genetron" propellants, we have the specialized experience and the research and testing facilities to help you find the right answers to your problems.

And, you don't have to invest a cent in special equipment or personnel to enter the profitable aerosol market. There are contract fillers near you who will take over the entire job for you quickly, economically.

Write now for list of firms equipped to fill aerosols with "Genetron" propellants.

Interested? Then send today for illustrated booklet packed with fast facts on how to market your products as aerosols: "How to Push Up Profits With Aerosols." Write to:

"Genetron" Department

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Basic Chemicals for American Industry

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Announcing

DURACOTE

– a development of major importance to glass container users

After 22 years of research, Owens-Illinois has developed a *universal* surface treatment for glass containers—the first container coating method considered worthy to become a part of the Duraglas technique of glass container manufacture.

The new DURACOTE treatment developed in the Owens-Illinois Technical Center, combines *for the first time* protection, non-toxicity and durability *with ease of labeling.*

During this period, our technicians have experimented with all types of surface coatings—from water soluble waxes to silicones. Many of our customers have used these coatings and found them to be effective in preventing surface scratching.

However, the invisible protective coating produced by the new Duraglas container treatment far surpasses all other types of surface treatments in durability and ease of labeling and filling. In addition, because it is non-toxic, this new treatment can be used on containers for a wide range of products.

DURACOTE is available *now.*

Call the Owens-Illinois branch office nearest you for complete details.

DURAGLAS CONTAINERS
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

PROTECTION is our business, too

Just as the "everyday" heroes of our nation's Coast Guard risk *their* lives to protect *our* lives—Jones & Laughlin Steel Containers protect your products by providing dependable packaging that assures safety in transportation and storage. Precise fabrication provides accuracy in all fittings and closures.

J&L drums and pails are chemically cleaned and dried by the JaLizing process. This assures a clean and dry, rust-inhibiting surface and increases the adherence and durability of decoration and interior lining.

Special protective interior linings are available to provide the best possible packaging for your products.

Jal-Coat, J&L's lithographing process, applies your trademark and sales message to the finished container . . . *no side seam touch-up is ever required.*

Plants located at Atlanta, Ga.; Bayonne, N. J.; Cleveland, Ohio; Kansas City, Kansas; Lancaster, Pa.; New Orleans, La., Philadelphia, Pa.; Port Arthur, Texas; and Toledo, Ohio.

JaLiner, J&L's integral plastic contour liner, is designed to solve "hard-to-package" problems.

J&L STEEL

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CONTAINER DIVISION
405 LEXINGTON AVE., NEW YORK 17, N.Y.

Packaging NOTES

Alpha Advances Orwoll

Ove A. Orwoll was advanced to sales manager by Alpha Engineering & Machine Works, Inc.,

Ove A. Orwoll

Mount Prospect, Ill., it was announced in July. He succeeds Grant V. Hoyt who resigned from Alpha to become general manager of Water Queen Softener Corp. Mr. Orwoll joined the engineering and development staff of the company in 1946 and was active in the early development of pressure packaging machinery. He then worked for several years in Alpha's heavy machinery development programs and, in 1954, he returned to aerosols as head of the aerosol engineering division.

★

New O-I Sales Branch

Establishment of a Connecticut sales office in Hartford for the glass container division of Owens-Illinois Glass Co., Toledo, O., was announced in July by Sidney F. Davis, vice-president and general manager of the division. John H. Kessler, with the firm since 1937, has been named senior salesman in the new office. He will be assisted by James D. Irwin who joined the company in 1950.

The Hartford office is the company's 45th sales branch in the United States and handles a general line of glass containers and closures. It is located at 945 Asylum Avenue.

★

Protective Film Recipe

Basic formulations for a new type of "aerosol skin bandage and protective film" were announced last month by General Chemical Division, Allied Chemical & Dye Corp., 40 Rector Street, New York. Part of a series of formulations for pressure packaged products developed in General's aerosol technical service laboratory, they are available for use and evaluation by aerosol marketers and contract fillers.

When dry, the protective film is composed of a copolymer of vinyl pyrrolidone and vinyl acetate plus a plasticizer. Abrasion resistant and transparent, the "bandage" offers good visual inspection of the wound. Incorporation of antibiotics, bactericides and other therapeutic agents may be feasible. The film is said to be easily removable with warm water.

Similar formulations could be used for a spray-on glove or antitarnish sprays or shoe polishes. The recipies can be obtained from General Chemical's "Genetron" department.

★

Anchor-Hocking Income Off

A slight decline in its net income for the six months to June 30, 1956 was reported recently by Anchor-Hocking Glass Corp., Lancaster, O. A net income of $3,079,002, with common stock earnings of $2.07 was reported for the first half of 1956, as compared with $3,183,564, or $2.14, in the first six months of 1955.

★

Crown Names McDonald

William R. McDonald has been appointed director of advertising and public relations by Crown Cork & Seal Co., Baltimore, it was announced last month. Prior to joining the staff of Robert F. Duemler, vice-president and director of sales for Crown Cork, Mr. McDonald was associated with the elevator division of Westinghouse Electric Corp. as advertising manager.

In his new position he will direct an expanded program of public relations and advertising, which is being prepared by J. M.

William R. McDonald

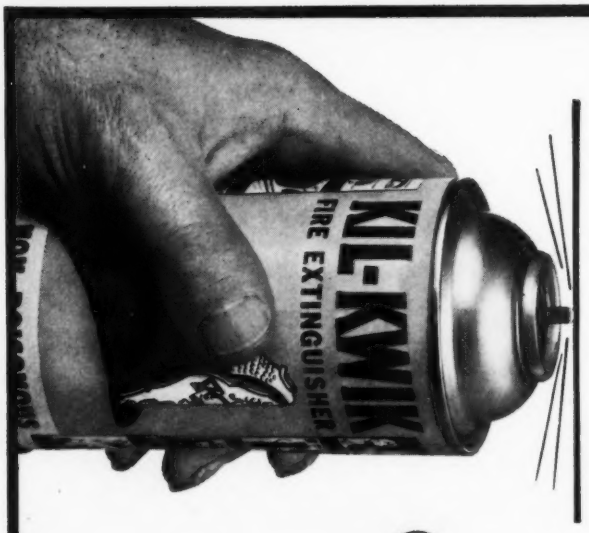
Mathes, Inc., New York public relations firm.

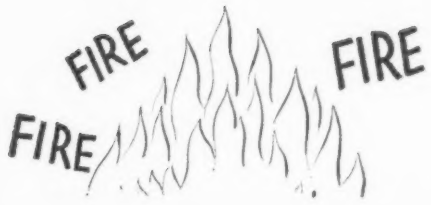
★

Cont. Can Earnings Up

Record sales and earnings for the six months ended June 30 were reported recently by Gen. Lucius D. Clay, chairman of the board of Continental Can Co., New York. Sales in the first half of this year amounted to $355,943,000, up 16 percent from the $306,047,599 reported in the comparable 1955 period. Net earnings, after taxes of $15,750,000, were $15,493,000, equal to $1.83 per common stock share on 7,759,642 shares outstanding. This represents an increase of $4,203,605 or about 41 percent over the $10,289,395, or $1.37 per share, earned in the first half of 1955.

Net earnings for the second quarter of '56 were $9,461,827, equal to $1.20 a share, compared with $7,090,011, or 95 cents a share of common stock, adjusted for the 100 percent stock distribution, for the June quarter of 1955. Earnings before taxes increased to $19,725,827 from $14,771,011. Net sales rose to $200,177,118, from $171,555,064 for the second quarter 1956.





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ESTABLISHED IN 1844

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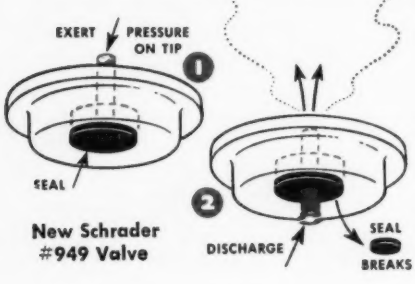

New Schrader #949 Valve

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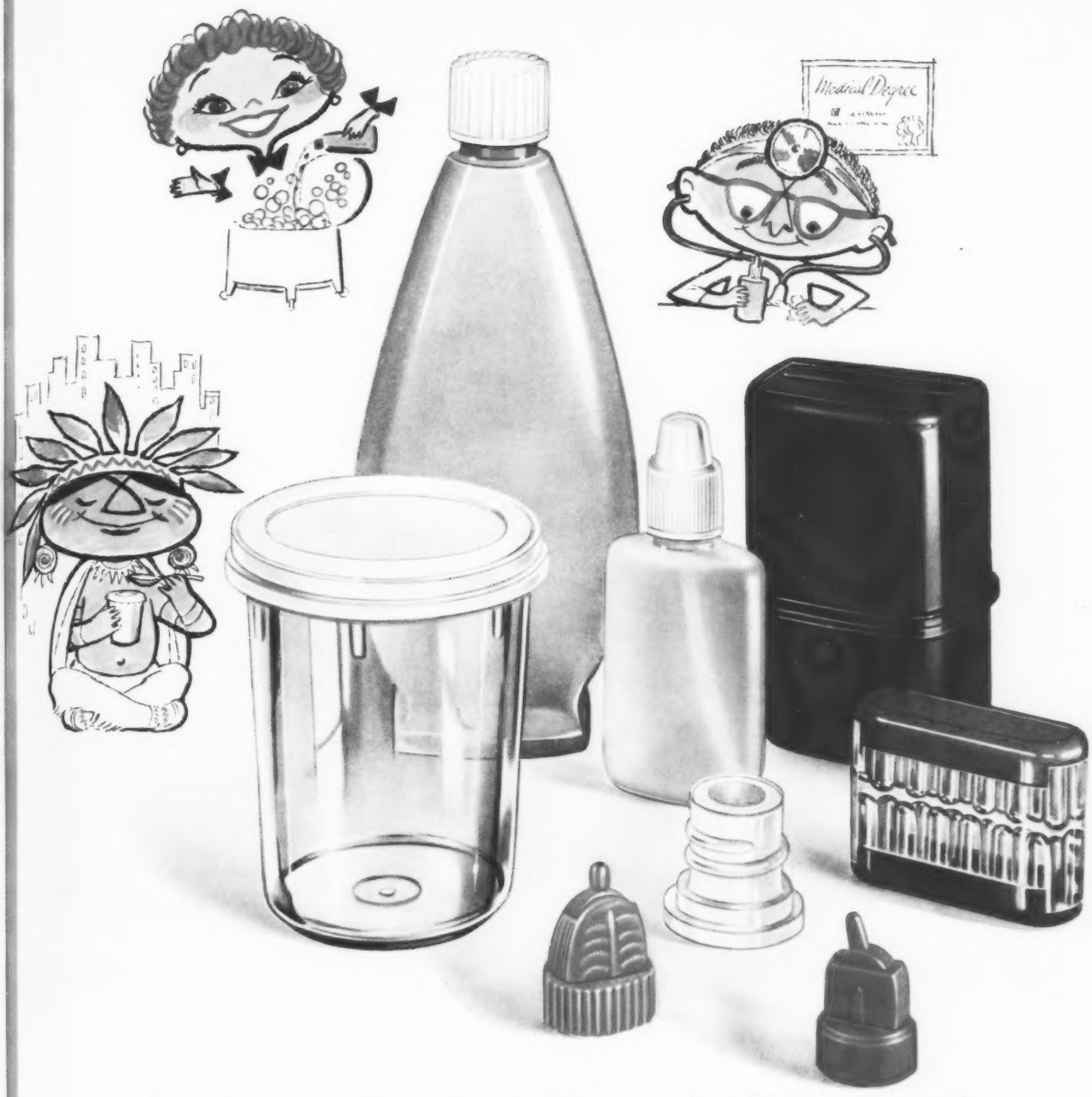
Company_____

Address_____



doctor . . . housewife . . . indian chief

ALMOST EVERYONE USES A PLASTIC PACKAGE BY CONTINENTAL

Take another look at this picture—and see if there isn't some plastic package that Continental can make for you.

Need a rigid container like the plastic cup? Polystyrene is crystal clear and displays your product to its best advantage.

Or plastic bottles . . . Continental turns them out in a wide range of sizes and shapes, in a whole rainbow of colors.

Maybe you need a finely-engineered part like the Turret Seal Cap. We make a variety of bottle accessories to spray, sprinkle, or pour. And we also make custom design containers such as the medicinal case and the clear plastic capsule case.

Plastic packages will help you sell your product. Our tailored-made service means follow-through from idea to finished product, assures you of best results. So, call on us soon.

CONTINENTAL CAN COMPANY

MILLSPLASTIC DIVISION

100 EAST 42ND STREET, NEW YORK 17, NEW YORK • 2930 NORTH ASHLAND AVENUE, CHICAGO 13, ILLINOIS

Does *Your Product* Fit Into This Picture?

Aerosol and pressurized packaging is boosting sales for hundreds of products . . . from insecticides to hair lacquers . . . from perfumes to mothproofers . . . from rug shampoos to hand lotions . . . from deodorants to shaving lathers.

Let us test your product to determine its adaptability to packaging the modern way. We'll do the research in our modern laboratory at no expense or obligation to you. Then we'll sit down with you for a frank discussion of exactly what facilities we have to offer in production, quality control, storage and shipping. Write, wire or 'phone . . . you'll find it worth your while.

PETERSON
Filling and Packaging Co.
HEGELER LANE • DANVILLE, ILLINOIS

American Can Co. to Process Own Plate

NEW equipment and plant facilities to process tin and steel plate from continuous strips are being installed by American Can Co., New York, in an effort to counteract rising tin and steel plate prices, it was announced recently. This will largely eliminate the use of pre-cut sheets, and will enable Canco to take plate from the steel companies in huge coils before it has been inspected, chemically treated or cut into sheets. In announcing a $27,000,000 appropriation to implement this program William C. Stolk, Canco president, called it one of the most important developments in the firm's 55 year history.

Tin plate prices have risen 91 percent since 1946 and can prices 75 percent, Mr. Stolk said. This squeeze, he pointed out, is the primary motivation for Canco's decision to take over important processing steps now performed by the steel mills. An equally important factor, Mr. Stolk said, is new technological developments including the growing use of tinless steel plate in can making. The most effective tin-free can making material is chemically treated steel. This treatment, like tin, prevents corrosion. Canco's program provides for installation of equipment at several locations for the chemical treatment of untinned steel. A new process for enameling tin and chemically treated plate in continuous strips before it has been sheared into "base box" size sheets, is being developed.

"The basic element of the coil strip operation," Mr. Stolk explained, "is the shearing line. These lines include machinery for unrolling the coils, inspecting the plate, shearing it, and sorting and stacking the sheets. We will have lines to cut plate for both can bodies and ends."

A number of the shearing lines will include machinery for chemical treatment of black steel plate and units for enameling the continuous strips of plate – either tin or black – are contemplated as part of the sequence of operations at certain locations.

Initial steps in the two-year program will be construction of a large new plate processing plant in the Chicago area. Under the $27,000,000 appropriation facilities can be installed in various locations to process between 75 and 85 percent of Canco's tin and steel plate requirements.

—★—

New Package Cost Pricing

A new and exact system to calculate unit cost of packaging with laminated materials has been developed by Shellmar-Betner, Mt. Vernon, O., Flexible Packaging Division of Continental Can Co., New York. With previous methods, the yield per pound of laminated packaging materials was subject to a 10 percent variation. Now a packaging buyer can know immediately whether his budget will cover a certain material or whether another less costly lamination will be required. The new method will also permit a buyer to determine the exact changes in packaging costs due to variations in specifications. For example, if he should desire a change to .002″ thickness of polyethylene instead of .0015″, the new system would tell him exactly what costs such a change would involve. Details on the guaranteed unit cost pricing system are available from the division.

—★—

Package Mach. Changes

Three executive changes in the management of Package Machinery Co., East Longmeadow, Mass., were announced last month by Roger L. Putnam, chairman. Harold Mosedale, Jr., formerly vice-president in charge of manufacturing, has been appointed vice-president in charge of engineering. In this post he succeeds Charles E. Palmer, who has resigned to devote himself to other outside interests. Mr. Mosedale joined the firm in the engineering division in 1930. He now returns to the division after having served in almost every major department of the firm's business.

Roger L. Putnam, Jr., who had held the position of controller and secretary of the company, has been elected vice-president in charge of manufacturing and assumes Mr. Mosedale's former duties. Mr. Putnam started with Packaging Machinery's manufacturing division in 1948 and later became production manager.

—★—

Protective Packaging Show

The 11th annual Protective Packaging and Materials Handling Exposition will be held concurrently with the technical short course in St. Louis, Mo., Oct. 21 through 24. The Society of Industrial Packaging and Materials Handling Engineers presents the exposition, the short course in cosponsorship with St. Louis University, and the National Protective Packaging and Materials Handling Competition. The three events will be under the same roof in Kiel Auditorium and will be timed so that the show and short course do not conflict, according to an announcement by C. J. Carney, Jr., managing director of SIPMHE.

—★—

New Priv. Label House

Establishment of Pharmco, Inc., 22292 Lakeland Blvd., Cleveland 23, was announced last month. The new organization is headed by Clarence Neuvirth, formerly chief developmental chemist at Strong Cobb & Co. Pharmco is equipped

(*Turn to Page* 104)

Clarence Neuvirth

is the word for LITHIUM

It's the lightest metal known.

Put a piece of it on your windowsill and it will soon dissolve into thin air.

Combine it with chemicals and it will do a thousand and one miraculous jobs from purifying the air in a submarine to making glass and ceramics.

Try to package it and you've got yourself a problem.

A few years ago the Lithium Corporation of America, Inc. asked our container specialists for help in packaging their lithium bromide and other compounds. There was no past experience to draw from in this case; because lithium itself was so new, very little was known about it. Test followed test in our laboratories, and at last a steel container with a special baked-on lining was developed that could successfully hold these young and restless chemicals and keep them fully protected from contamination or loss of quality in shipment.

NOW . . . ABOUT *YOU*. Whether your product is brand new or well-established, packaging precision is all-important. Chances are that steel packaging by Inland can give you just what you need. For the full story, write Bob Boecher, Dept. 311D

INLAND

**the right container, with the right lining for your product*

Full line of steel and stainless steel shipping containers including galvanized and heavy duty ICC drums.

INLAND STEEL CONTAINER COMPANY

Division of Inland Steel Company • 6532 South Menard Avenue, Chicago 38, Ill. • Plants: Chicago, Jersey City, New Orleans, Cleveland and Greenville, Ohio.

What's New?

New "Hep" aerosol insecticide of Bostwick Laboratories, Inc., Bridgeport, Conn., features formulation containing a five-percent combination of DDT, methoxychlor and "Thanite," made by Hercules Powder Co. New "Hep" is claimed to be nonflammable and free from malodors.

Tussy Cosmetiques, New York, has just announced a new deodorant soap containing Monsanto's bithionol germicidal ingredient. New Tussy deodorant soap, which is made by Hewitt Soap Co., Dayton, O., comes in red and white package which holds three oblong cakes of soap.

New, three-piece home deodorizer, "Wizard Sponge-Aire," was introduced nationally recently by Boyle-Midway, Inc., New York, to retail for 69 cents. New room deodorizer operates by means of a sponge in plastic urn which may be used in any room. Set consists of urn, sponge and six ounce bottle of "Wizard Deodorizer Liquid" in either popular "Wizard" spring bouquet fragrance or pine scent. Lid of urn, when removed, becomes pedestal for two-piece urn, which is then filled with deodorant liquid. Twelve-ounce bottles of refill liquid are available in both spring bouquet and pine fragrances.

PURO
LIQUID TOILET BOWL CLEANER
With Added Metal Protector
An Ideal Fluid for Cleaning Toilet Closet Bowls and Urinals
Aids in Removing Toilet Room Odors
Scale And Rust Remover
THE PURO COMPANY, INC.
2801-05 LOCUST ST.
ST. LOUIS 3, MO.

Recently added to line of Puro Co., St. Louis, is new liquid bowl cleaner. Said to remove scale and rust as it cleans commodes and urinal, "Puro Liquid Toilet Bowl Cleaner" is a stabilized emulsion of a solvent for organic deposits in muriatic acid with a detergent. Product comes packaged in one quart bottles and is available under the Puro trade name or under private label.

New "Turtle Wax" detergent car-wash of Plastone Co., Chicago, is now being marketed in round, no-drip 12-ounce American Can Co. can with plastic nozzle and lithographed label. Product is being distributed in national and international markets by Plastone in automotive stores, auto service stations, hardware, department and grocery stores. As an introductory offer Plastone gives free can of car wash with each bottle of the firm's auto polish.

Another new product of Puro Co., St. Louis, is a liquid glass cleaner. New cleaner-polisher combination is available in quart and gallon glass bottles under private label or carrying the Puro trade name. Product is light green in color.

For control of odors in garbage cans, Puro Co., St. Louis, recently announced a new garbage can deodorant. The product is available in quart and gallon bottles and five gallon cans under private label or with Puro trade name.

"Aero" spot remover of Boyle-Midway, Inc., New York, introduced recently, features novel type applicator cap. Inner cap has a taut textured fabric cover, which when sealing liner beneath it is removed, is saturated with cleaner fluid and applied to soiled fabric. Five ounce bottle retails for 29 cents.

Osrow Products, Inc., Glen Cove, N. Y., recently adopted the 12-ounce no-drip container of American Can Co., New York, for its "Sparkle," a liquid detergent for car and home washing. New "Sparkle" container shown features around-the-can lithography in white, green and red, an aluminum nozzle and a plastic cap. Product is being distributed nationally through jobbers for sale in automotive supply, department and hardware stores. Suggested retail price is $1.29.

to manufacture and to develop private label products. Packaging facilities for both conventional and aerosol products are offered as well as all ancillary packaging services such as label design, etc. Testing facilities include spectrographic analysis. Marketing advice and analysis are provided by Pharmco, and drop shipment facilities are available to the firm's customers.

Mr. Neuvirth has 22 years of experience in the development and manufacture of specialties formulations. Before joining Strong, Cobb & Co., he worked in metals analysis with U. S. Aluminum Co. and prior to that at Miller Drug Co. in Cleveland.

★

Allen in New Crown Post

Robert Allen has been appointed consultant on machinery sales by Crown Cork & Seal Co., Baltimore, it was announced recently by Robert F. Duemler, vice-president and director of sales. In this newly-created position Mr. Allen makes his headquarters in Baltimore. His responsibilities include planning for coordination of the selling and service activities of all divisions as they relate to trade machinery used for crowns, closures, and cans made by the company.

Robert Allen

Prior to joining the Crown organization Mr. Allen served as general manager of Standard-Knapp division of Emhart Manufacturing Co., Portland, Conn., makers of packagaing machinery. Prior to that he was vice-president of Bridgeport Brass Co., Bridgeport, Conn.

★

Anchor Hocking Names Two

Two executive appointments were announced recently by Anchor Hocking Glass Corp., Lan-

(*Turn to Page* 107)

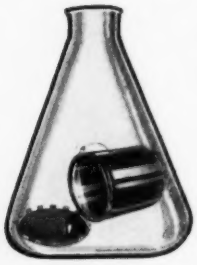
R. N. DeMerell

at VULCAN®

Service means...

packaging research

Vulcan's modern research facilities are constantly at work developing and improving protective interior linings for all types of products... It's your answer to positive protection whether product is used immediately or stored indefinitely.

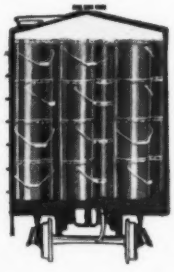


'completeness' of the line

Vulcan makes top quality steel open head pails, closed head drums. Sizes; 1, 1½, 2, 2½, 3, 3½, 4, 5, 6, 6½, 10, 12 gallons with all types nozzles and pouring spouts. Complete lithography facilities available. Wide color selection for plain containers.

ready availability

Vulcan's constant inventory of all Standard pails speeds your order. Modern railroad and truck docks mean quick loading, immediate dispatch. From carton to carload or truckload —when delivery is important—call VULCAN!



OVER 40 YEARS CONTAINER EXPERIENCE

VULCAN CONTAINERS INC.

Bellwood, Illinois (Chicago Suburb) Phone: Linden 4-5000

In Toronto, Canada—Vulcan Containers Limited.

Representatives in all Principal Cities

Package design your bottleneck?

LET MARYLAND GLASS DESIGN A BLUE OR FLINT GLASS CONTAINER FOR YOUR EXCLUSIVE USE

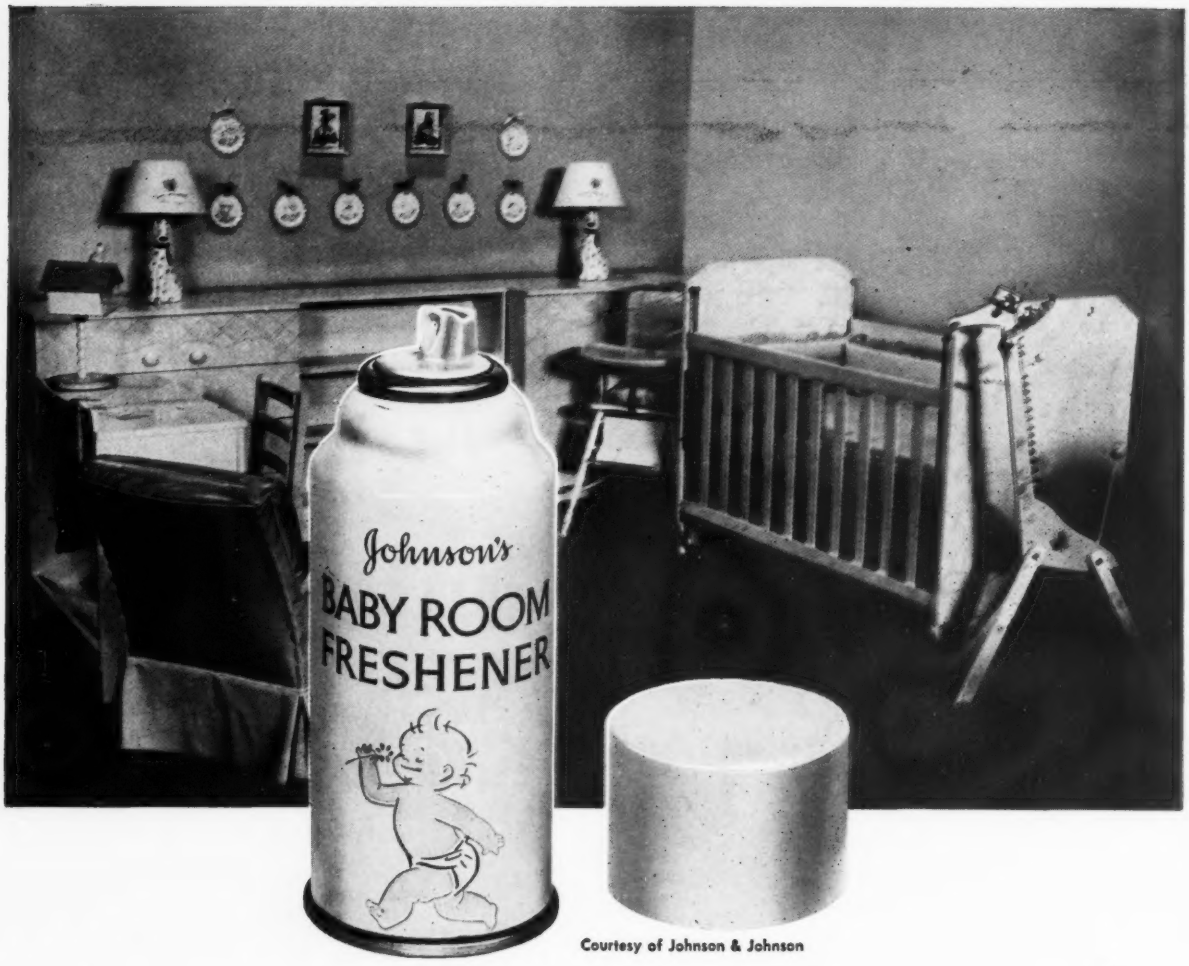
Sure, we make bottles and jars. But, more important to you, we design them. Our creative staff has the experience, the skill, the imagination to help you successfully redesign your old package or develop a new one. We've proved this many times. Now we would like to prove to you that we can design a container that will sell your product. If you have a design problem, get in touch with us. No obligation, of course. Maryland Glass Corp., 2147-53 Wicomico St., Baltimore 30, Md.

STOCK DESIGNS—a variety in blue or flint glass and a complete range of sizes is ready for immediate shipment.

PACK TO ATTRACT IN

MARYLAND GLASS

BLUE OR FLINT JARS AND BOTTLES



Courtesy of Johnson & Johnson

*controlled packaging**

Recently, JOHNSON & JOHNSON decided to test-market another baby product. They wanted an expert aerosol packager to fulfill their high-quality standards.

This outstanding concern as with many others, found the solution to their aerosol packaging in the modern facilities and experience of FLUID CHEMICAL COMPANY. The happy result is a very attractive, easy, safe-to-use aerosol product.

FLUID'S *"controlled packaging" is achieved through constant laboratory analysis, automation filling, continual inspections, and scientific materials handling . . . plus prompt delivery and economy.

All FLUID'S efforts are directed solely toward filling customer needs — we manufacture no products of our own.

Write today for more on "controlled packaging" by FLUID.

MEMBER

Packaging Institute

18th Annual Forum
Sept. 10-12, 1956
Hotel Statler
Cleveland, Ohio

"First in Contract Packaging"

FLUID

CHEMICAL COMPANY INC.

880 MT. PROSPECT AVE., NEWARK, N. J.
Telephone: HUmboldt 5-2880

PRODUCTS · AEROSOLS—GLASS AND METAL
LIQUID—TUBE—JAR—DRY PACK FILLING
RESEARCH • DEVELOPMENT

FOUNDED 1921

E. M. Lawrence

caster, O. R. N. DeMerell, with the firm since 1929, was elected vice-president, national package accounts. He will continue to make his headquarters in New York.

E. M. Lawrence, with headquarters at the home office in Lancaster, O., was elected vice-president, sales administration. He has been with the company since 1930.

Both men will report to S. B. DeMerell, vice-president in charge of the package division.

New type aerosol can made by Continental Can Co., New York, is said to be first in which the side seam can be striped to match the background color on the can body. Employing a spray method of side seam coloring, Continental offers this development on its six-ounce dome top style aerosol cans (200 x 314 size). This feature will also be made available on several other can sizes in near future.

Side striping of can outside is of particular importance to cosmetic industry in which highly varnished paper labels have been used heretofore. Because of high gloss feature it has been difficult to obtain proper adhesion for paper labels. New striping process for side seam area eliminates this paper label operation in plants of aerosol fillers.

Continental's outside side stripe is sprayed on and air dried. No base coat is needed over the plain side seam metal, and no varnish coat is applied over the spray.

Risdon Valve Bulletin

Publication of a bulletin on its glass bottle valve for pressure packed products was announced recently by Risdon Manufacturing Co., Naugatuck, Conn. Basic information on pressurized packaging, and outlines, in text and diagrammatic form, of the various applications of the valve with standard, "micro-mist" and foam actuators is given in the booklet.

★

Canco Names Beard

W. S. Beard has been appointed manager of sales for American Can Co.'s Atlantic division, it was announced recently by T. E. Alwyn, vice-president in charge of East coast operations. Mr. Beard, former assistant division manager of sales succeeds Daniel T. McFadden, who has been appointed assistant to Edward K. Walsh, Canco's general sales manager. With the company since 1937, Mr. Beard worked at the Fairport, N.Y., plant and in the Geneva, N.Y., machine shop. He began sales work in 1940 at Portland, Me. From Portland he transferred to the Boston sales department in 1942, to Indianapolis in 1947 and became head of the Indiana district a year later. In 1953, Mr. Beard was appointed central division commodity manager in charge of sales of fruit and vegetable cans, and two years ago he was named assistant manager of sales in the Atlantic division.

Concurrently with Mr. Beard's advancement these other changes in the Atlantic division were announced: D. B. Ressler, former North Jersey district sales manager, succeeds Mr. Beard as assistant manager of sales. The new North Jersey district sales manager is R. V. Bradley, former salesman in the metropolitan New York district sales office. J. M. Asensio has been appointed assistant to Mr. Beard, succeeding E. J. Gazda, who becomes supervisor, administrative group of the division sales force. D. J. DeLand, former manager of the Philadelphia district sales office, has been appointed commodity manager in charge of fibre con-

W. S. Beard

tainer sales. He is succeeded in his Philadelphia post by W. H. Gaul, former salesman there.

★

A-H Advances Fordham

Anchor Hocking Glass Corp., Lancaster, O., recently announced the advancement of James M. Fordham to factories manager of the container division succeeding W. R. Bone, who has resigned. Mr. Fordham's headquarters will be at the corporation's general offices at Lancaster, O. He has been with Anchor-Hocking for 27 years, and has served in various responsible positions at different A-H plants. Most recently he was plant manager of the Salem, N. J., glass container factory of the company.

Ralph R. Newkirk, production manager of the Salem plant, and with the company 24 years, will succeed Mr. Fordham as plant manager.

James M. Fordham

Aerosol Awards...

The fifth annual AEROSOL AWARDS will be made
in conjunction with the 43rd Annual Meeting of the

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION

AT THE MAYFLOWER HOTEL, WASHINGTON, D. C.

DECEMBER 3, 1956

. . . to include judging and selecting of best aerosol packages of the year

The aerosol package competition and awards will
be divided into ten classes as follows:

1. Insecticides, repellents, moth proofers.
2. Room deodorants.
3. Lacquers, enamels, other protective coatings; paint remover.
4. Other household products — polishes, glass cleaner, rug shampoo, water repellent, etc.
5. Shave products.
6. Hair preparations.
7. Other personal products—shampoo, body deodorants, sun tan oil, drugs, etc.
8. Snow, all types
9. Industrial products — lubricants, belt dressings, stencil inks, etc.
10. Glass and plastic packages — all products.

. . . a top award for "best in the show" will also be made

Rules of the contest:

1. All entries must be made in the name of the brand owner or marketer. All products entered must have been freely offered for sale on the open market.

2. Entries will close November 1, 1956. All entries should be sent as soon after Sept. 20 as possible to the Committee at the CSMA office, and should comprise one completely assembled empty container with attached tag showing (a) name and address of brand owner, (b) class in which entry is made.

3. Only one entry may be made by any marketer or brand owner in any one class, but entries may be made in as many classes as desired.

4. Products entered must be properly labeled in accordance with safety requirements and all laws and regulations pertinent to particular products.

5. Entries are open to any aerosol brand owner or marketer anywhere, and are not restricted to members of CSMA. There are no entry fees or other charges to entrants.

6. Best packages will be selected in ten classes and a "best package in the show" will be named. Judging will be done by a group of qualified experts. Their decisions will be final and will be announced and awards made at the 43rd annual meeting of CSMA in Washington.

For entry blanks or information, write to
AEROSOL AWARDS COMMITTEE
Chemical Specialties Manufacturers Association
50 East 41st St., New York 17, N. Y.

Make Plans for Your Entries Now!

NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12(a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany notice of opposition.

Westley's, X-10 — These for automobile polishes. Filed Dec. 2, 1955 by Bev-Rich Products, Inc., Philadelphia. Claims use since Mar. 1, 1950, and October 1947, respectively.

Stanley Sure-Kyl — This for liquid insecticides. Filed Nov. 19, 1954 by Stanley Home Products, Inc., Westfield, Mass. Claims use since June 1934.

Ruside—This for germicidal solutions for sterilizing and storing surgical instruments. Filed Feb. 28, 1955 by Ruson Laboratories, Inc., Portland, Ore.

Duo—This for powdered bleach compound. Filed May 26, 1955 by Chatham Laboratories, Inc., Whippany, N. J. Claims use since June 15, 1949.

Pah-No 1—This for anti-freeze. Filed June 9, 1955 by Philip A. Houghton, Inc., Boston. Claims use since July 15, 1954.

wil-kil—This for insecticide. Filed July 18, 1955 by Wilbur-Ellis Co., Seattle. Claims use since Mar. 21, 1955.

Car lendacide—This for germicidal preparation for personal use. Filed Mar. 30, 1955 by Carlen Corp., Coral Gables, Fla. Claims use since Dec. 10, 1953.

Violux V—This for dental creams and shaving creams. Filed July 28, 1954 by Rey Lux Mfg. Corp., New York City. Claims use since Mar. 10, 1954.

Snowite—This for dentifrice. Filed Dec. 8, 1954 by Carter Products, Inc., New York City. Claims use since Nov. 5, 1954.

Beeman's—This for brushless, and lather shaving creams. Filed Apr. 18, 1955 by Beauty Counselors, Inc., Grosse Pointe, Mich. Claims use since Dec. 15, 1934.

Winchester—This for lather shave. Filed June 23, 1955 by Olin Mathieson Chemical Corp., New York City. Claims use since 1867.

Pine-Plus—This for all purpose liquid cleaning preparation having deodorizing and disinfecting properties. Filed Apr. 27, 1953 by H. A. Cole Products Co., Jackson, Miss. Claims use since Oct. 10, 1951.

Drisyn Spotter 5—This for liquid stain removing composition for fabrics. Filed July 16, 1953 by E. F. Drew & Co., New York City. Claims use since Apr. 17, 1953.

Dari-Kleen—This for sanitizing cleaner used primarily for milkstone removal. Filed Feb. 11, 1955 by Pennsylvania Salt Mfg. Co., Philadelphia. Claims use since Aug. 17, 1953.

Gulf—This for car washing compound. Filed May 16, 1955 by Gulf Oil Corp., Pittsburgh. Claims use since Nov. 10, 1953.

Host—This for dry cleaning powder for rugs, carpets, and the like. Filed May 19, 1955 by Racine Industrial Plant, Inc., Racine, Wis. Claims use since Mar. 21, 1955.

Werx—This for sudsing cleaner, cleanser, and detergent. Filed July 28, 1955 by Hewitt Soap Co., Dayton, O. Claims use since May 15, 1929.

Acotex—This for anti-static cleaner used in the automotive and aircraft industries for cleaning glass and plastic materials. Filed Aug. 25, 1955 by Permatex Co., Inc., Brooklyn. Claims use since July 26, 1955.

Atlas—This for leather cleaner for automobile upholstery. Filed Sept. 7, 1955 by Atlas Supply Co., Newark, N. J. Claims use since Aug. 18, 1955.

ExGo—This for silver nitrate stain remover. Filed Sept. 20, 1955 by A. L. Wilson Chemical Co., Kearny, N. J. Claims use since Nov. 15, 1954.

"Cham' — Suela"—This for shampoo for hair. Filed Sept. 23, 1955 by Ezequiel B. Cintron, New York City. Claims use since Apr. 23, 1953.

Lipa—This for detergent additives. Filed Sept. 26, 1955 by Ultra Chemical Works, Inc., Paterson, N. J. Claims use since September 1952.

Alexandra de Markoff—This for soaps. Filed Sept. 30, 1955 by Alexandra de Markoff Sales Corp., New York City. Claims use since June 22, 1949.

peri—This for washing compound. Filed Dec. 6, 1955 by Monarch Chemicals, Inc., Minneapolis. Claims use since July 1, 1950.

Colonial Maid—This for silver polish. Filed Aug. 13, 1954 by Hiram F. Turner, doing business as Turner & Co., Richmond, Va. Claims use since July 17, 1954.

Foremost—This for floor waxes. Filed Nov. 14, 1955 by Delta Chemical Co., Memphis, Tenn. Claims use since Aug. 19, 1955.

Tuff-Sheen Wax—This for floor wax. Filed Nov. 14, 1955 by Sanitek Products, Inc., Los Angeles. Claims use since September 1943.

Pro-Phion—This for herbicides. Filed June 22, 1954 by Pittsburgh Coke & Chemical Co., Pittsburgh. Claims use since June 1, 1954.

Fosvex—This for insecticide. Filed June 27, 1955 by Food Machinery & Chemical Corp., New York City. Claims use since on or about Nov. 21, 1947.

Wood Breze, Maiden Fair, Baby Fair—These for room deodorants. Filed Aug. 12, 1955 by Continental Midway Corp., Baltimore. Claims use since May 23, 1955, May 1, 1954, and Apr. 28, 1955, respectively.

Foremost—This for insecticides, disinfectants, household and industrial deodorants. Filed Aug. 15, 1955 by Delta Chemical Co., Memphis, Tenn. Claims use since June 28, 1954.

Sof-n-ets—This for bath water softener. Filed May 27, 1955 by Beardmore Products, Inc., E. Rutherford, N. J. Claims use since May 3, 1955.

Mira-Kleen—This for liquid cleaning compound for manikins, fixtures, and plastics. Filed Mar. 12, 1954 by Tropdis Co., Miami, Fla. Claims use since June 2, 1953.

Synergic Energy — This for cleanser and polisher in powder or cake form for household use and for cleaning hands. Filed Sept. 9, 1954 by Bon Ami Co., New York City. Claims use since July 20, 1954.

Melody In Water—This for liquid detergent for household use. Filed Mar. 25, 1955 by Pino-O-Pine Co. of Texas, Houston. Claims use since Mar. 17, 1955.

Tru-Way—This for liquid detergent for dishes, and as an all purpose cleaner. Filed July 18, 1955 by Texize Chemicals, Inc., Greenville, S. C. Claims use since Mar. 13, 1955.

Nyapon—This for synthetic detergents for household and industrial uses. Filed Sept. 14, 1955 by Nyanza Color & Chemical Co., New York City. Claims use since 1932.

Tig — This for concentrated general liquid cleaner for dishes, automobiles, floors, and walls. Filed Oct. 21, 1955 by Diversey Corp., Chicago. Claims use since Jan. 3, 1955.

Emperor Wax—This for automobile wax polish. Filed July 6, 1954 by Majo Co., Philadelphia. Claims use since Jan. 6, 1954.

Ny-Col—This for cleaning and polishing liquids, polishes and impregnated applicators for automobile bodies and similar surfaces. Filed Aug. 24, 1955 by Chisholm Industries, Inc., Lynn, Mass. Claims use since Dec. 9, 1954.

Ekco—This for metals polishing compound. Filed Dec. 7, 1955 by Ekco Products Co., Chicago. Claims use since Oct. 1, 1952.

Ultra Gloss—This for wax polishes, floor polishes, and industrial waxes. Filed Dec. 13, 1955 by Ultra Chemical Works, Inc., Paterson, N. J. Claims use since July 1935.

Swat — This for insecticide. Filed Aug. 12, 1955 by Continental Midway Corp., Baltimore. Claims use since May 23, 1955.

photoptic — Visio — Visera — optico—These for cleaning and polishing compositions providing a protective coating for glass surfaces (namely photographic lens, display glass and mirrors, windshields, and optical lenses, respectively). All filed Jan. 10, 1955 by Dan Cu Chemical Co., Oklahoma City, Okla. Claims use since Dec. 15, 1954 on all.

Razo—This for rust inhibiting preparation having incidental sterilizing and cleansing properties, used for razors, surgical instruments, and the like. Filed July 25, 1955 by J. Russell Verbrycke, Jr., Washington, D. C. Claims use since July 6, 1955.

Nu-Floor—This for paint remover. Filed Aug. 31, 1954 by Sun Chemical Corp., Long Island City, N. Y. Claims use since Sept. 9, 1950.

(*Turn to Page* 183)

Whatever it does,
your aerosol
does it better with

DU PONT

"FREON"* *propellents*

BECAUSE YOU HAVE HAD THE BENEFIT OF DU PONT'S

- complete laboratory service
- helpful marketing data
- technical field assistance
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PRESSURE PACKAGING

BIGGEST item of news in an otherwise dull month so far as aerosols are concerned was acquisition of Connecticut Chemicals Research Corporation and its marketing counterpart, Bostwick Laboratories, by the old line soap firm of B. T. Babbitt.

Rumored as brewing for several months, the acquisition became official in mid-July through Babbitt's purchase of controlling stock interest in the Bridgeport firms. First public announcement . . . termed a purchase by Babbitt and a merger by ConnChem . . . said no personnel changes are contemplated, leaving A. O. Samuels at least nominally in the driver's seat of the aerosol end of the business machine.

Babbitt, whose "Bab-O" cleanser and "Glim" liquid detergent are already well-known household names, had evidenced no direct interest in aerosols prior to the acquisition . . . could sharply expand national distribution of Bostwick's pressurized products and a whole line of other chemical specialties through their existing marketing set-up. The acquisition, with resultant increase in capital resources, could give a boost to ConnChem's current interest in "Polysols" as a new, broader concept of the pressurized packaging principle.

The question is raised in our minds, too, as to whether this latest "merger" is a sign of things to come . . . of a possible trend toward absorption of the contract loader by the marketer. While there'll always be a need for and a place for the contract loader in the aerosol scheme of things—especially to serve small volume marketers or newcomers who can't afford their own loading operation—it fortifies many people's statements that the scales are shifting from the side of the contract loader to that of the "captive" loader.

Just a few months ago, we hear, Rexall and Aerosol Techniques of Bridgeport were talking seriously of joining forces . . . discussions, however, "fell through" completely in May, according to our information. President of Aerosol Techniques is H. R. Shepherd, who until last fall was A. O. Samuels' vice-president in Connecticut Chemical Research.

Our personal opinion . . . the Babbitt-ConnChem combination is an isolated case, not a forerunner of mass mergers of the loading and marketing ends of the business. Most loaders see a brighter future in "playing the field," rather than putting their eggs in one basket.

* * *

Added Responsibility

MINOR revisions in ICC's Tariff 9—"bible" of the aerosol business so far as shipping and, indirectly, safety regulations are concerned—become effective August 31 . . . by relaxing government controls, place new responsibilities on aerosol loaders and marketers to protect the public safety.

Two sections of the ICC regulations are involved. In paragraph 73.302, the Commission boosts the allowable pressure for foodstuffs and soaps in pressurized containers ten pounds . . . new top limits will be 115 pounds per square inch gage at 70°F. or 150 psig absolute at 130°F.

But a more important change in paragraph 73.302 is exemption of "medical preparations" whose structure might deteriorate or be changed by heating from the usual ICC requirements. All pressurized products to be shipped in interstate commerce must be heated to 130°F. to assure container safety, according to ICC rules. The new regulations require spot checking only of one container in each lot of 500 or less at the 130°F. temperature.

What this means is that the ICC is willing to rely upon the integrity of the aerosol loader to protect the consumer by spot checking only aerosol medical preparations which would be damaged, from an active ingredient standpoint, if every single container had to be heated to the 130°F. temperature. Now, it's the responsibility of the aerosol loader to be sure that his loading techniques are sufficiently uniform and closely controlled that the 499 packages not actually heat-tested in each batch of 500 exactly duplicates the test package.

It's our hope that no aerosol loader, through carelessness, will give ICC cause to re-consider the decision of faith implied in the new regulation.

Correcting an omission in previous revisions, the latest ICC regulations also permit use of non-refillable metal containers of a capacity not to exceed 31.83 cubic inches (17.6 fluid ounces) under paragraph 73.306 (d) to update the former size limitation of 16.6 fluid ounces.

* * *

FTC Cracks Down

A FEDERAL TRADE COMMISSION complaint, involving alleged slack fill of aerosol snow containers, has been issued against U. S. Packaging Corp., Bridgeport, Conn., and A. O. Samuels, H. R. Shepherd, Jack Schenberg, and Herbert L. Cohen, individually and as officers of U. S. Packaging Corp.

Gist of the complaint is that the 16-ounce can marketed by the defendants was oversized for the amount of the fill (10.5 ounces) . . . further that FTC questions accuracy of the label claim that the defendants' 10.5 ounce fill would deliver considerably more snow than that delivered by other smaller containers with the same 10.5 ounce fill.

Defendants were given 30 days from the June 29th date of the complaint in which to file an an-

swer to the FTC charges. Hearings on the FTC complaint will be held in Bridgeport, Conn., Sept. 18. (See editorial on page 31, this issue.)

* * *

This 'n' That

BACK in harness after bouts with physical ailments are Earle Kimble, Bridgeport area sales representative for Du Pont's Kinetic Chemicals Division, and Lee Callens, aerosol sales manager for General Chemical Division of Allied. Kimble wound up nearly six months recuperating from an operation for a slipped disk, while Callens fought off a stubborn vocal cord infection without, we're glad to hear, having to resort to surgery.

* * *

Conner in New Firm

JOHN CONNER, CSMA counsel and partner in the Washington legal firm of Sellers & Conner, has teamed up with former U.S. Attorney General Homer Cummings in the new law firm of Cummings, Sellers, Reeves and Conner. The switch, effective July 1, will make no change in John's relations with CSMA, which benefits more than most people realize from his knowledge of Washington's ins-and-outs. His relations with several of the government agencies have been most valuable to the Aerosol Division . . . ranging from his establishment of appropriate contacts in the Commerce Department to obtaining brass for aerosol valves in the days of World War II shortages to more recent explanations to the Federal Trade Commission of the complexities of an aerosol package with respect to proper loadings. His constant availability to association members and his regular attendance at Aerosol Division meetings have been a big boon to the aerosol business.

* * *

CSMA Proceedings

PROCEEDINGS of the 42nd annual meeting of CSMA, held last December in New York City, rolled off the press at long last and struggled into the mails in mid-July . . . 240 pages were required to record the thousands of words making up various reports, resolutions, and transcripts of nearly 50 technical papers presented during the three-day session.

CSMA, a little abashed at the long time required to get the Proceedings in printed form for distribution . . . it was the first time they'd failed to finish up the Proceedings of one meeting before the next was held . . . hopes to have the Proceedings of the 42nd mid-year meeting (Chicago, last May) in members' hands by September 1. It seems the delay this time resulted from the selection of an "economy" printer . . . whose lower printing price carried the penalty of slow delivery. The value of Proceedings decreases in direct proportion to the length of the time lapse between the meeting and the printed report . . . sometimes a few dollars "saved" is poor economy.

* * *

No Lanvin Aerosols

ON the light side: Culling some clippings from May newspapers, we ran across a brief squib about a recent visit to the U. S. by Prince Albert Poniatowski of

(*Turn to Page* 167)

Deny Having Glass Aerosol Trouble

SOAP & CHEMICAL SPECIALTIES sincerely regrets its error in publishing unverified rumors in this column in the July issue. Investigation of the facts indicates that Helene Curtis Industries, Inc., Chicago, has encountered no difficulties in propellant leakage in its refillable purse size "Ultra Spray Net" hair spray, and that Lentheric did not withdraw one of its glass package aerosols from retail sale.

Jack Mohr, president of Lentheric, New York, completely denied that his firm was having trouble with its glass aerosols, that they had been withdrawn from retail sale, or that their bottle design is structurally weak. No unusual difficulty has been encountered in the more than five million glass aerosol products sold by Lentheric, he said. In a letter dated June 20, 1956, sent to Lentheric dealers and a copy of which was received by SOAP Mr. Mohr states that "Mist Line," packaged in an uncoated glass container, was received by hundreds of thousands of customers throughout the country with great enthusiasm, and our present day sales of the product indicate that we have added to our original satisfied group even though we have not changed the original product one iota from its introductory form."

Arthur M. Adler, vice-president of Helene Curtis Industries, Inc., Chicago, stated "We have had absolutely no problems or complaints of any type with our purse size refillable dispenser. As a matter of fact, it has had one of the most remarkable records we have yet experienced in that it has been so free of complaint or difficulty. I know of no instance of any propellant leakage among the millions of units shipped. I know of no instance of a had crimp which has been reported. As to the type of premarket evaluation this package was subjected to and the premarket tests which are always carried out before the introduction of any Helene Curtis products, I should like to advise you that we are very proud of the procedures followed by this company. We did not leave any matters for the consumer to discover and you did not have the faintest idea as to what you were talking about when you made these statements. The tests conducted were thorough and extensive and the excellent record of the product speaks well for what was done."

Soap & Chemical Specialties sincerely regrets its error in publishing these unverified rumors and any damage that may have been done to these two well-known products as a result.

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ADVANTAGES of membership in the Chemical Specialties Manufacturers Association are many. Direct services to members from CSMA headquarters, including the regular bulletin service, are of vital importance to every member firm. Through participation in the affairs of this very active trade association, many valuable contacts have been and can be made. And there are numerous other benefits.

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H. W. HAMILTON, *Secretary*

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B-Square 190 A	190/195	2-7	1½ Max.	Nil	Nil
Petrolite C-1035	195 Min.	2 Max.	1½ Max.	Nil	Nil
Petronauba D	185 Min.	5 Max.	6 Max.	20-28	50-60
Petrolite C-15	180 Min.	4-6	4-5	15-17	45-55
Petrolite C-23	180 Min.	4-6	4-5	20-25	55-65
Petrolite C-36	180 Min.	5-7	4-6	30-35	75-85
Petrolite PE 100	195-200	2-3	4-6	15-20	45-55
Petrolite R 50*	190-200	2 Max.	4½ Max.	40-50	65-80
Petrolite P 20	210-220	2 Max.	3 Max.	Nil	Nil

*R-50 is a microcrystalline wax—phenolic terpene resin blend. It is compatible with the waxes usually used in emulsion polishes, and can be used in all emulsion equipment. Its use saves the nuisance of separately storing and handling both resin and wax.

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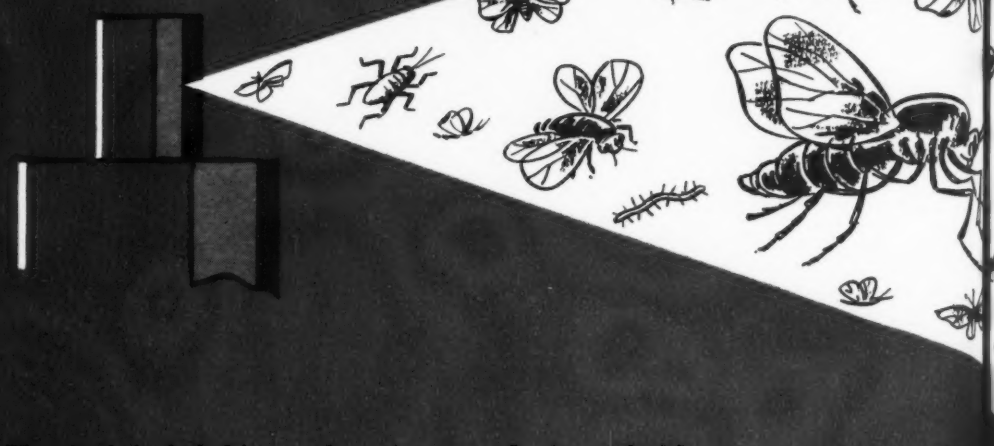

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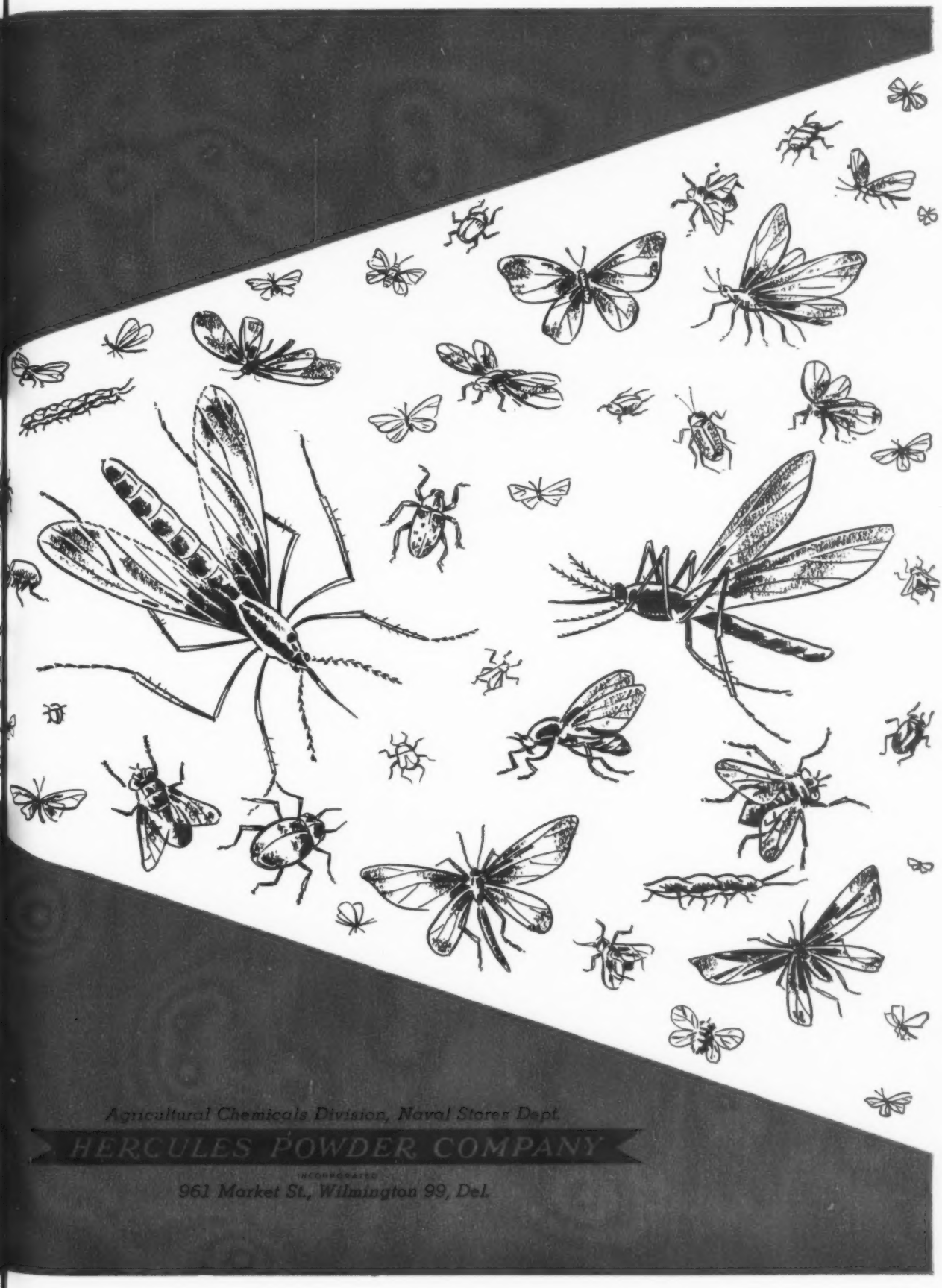

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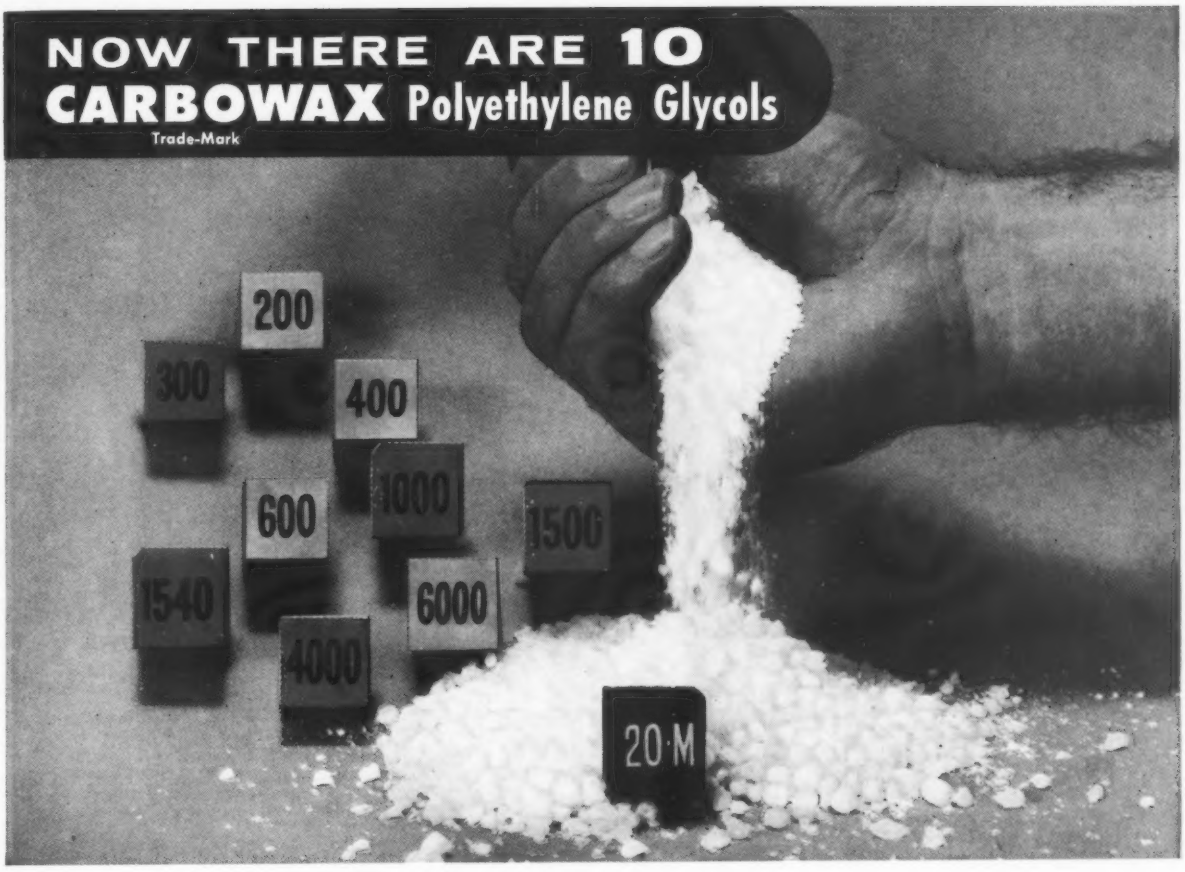

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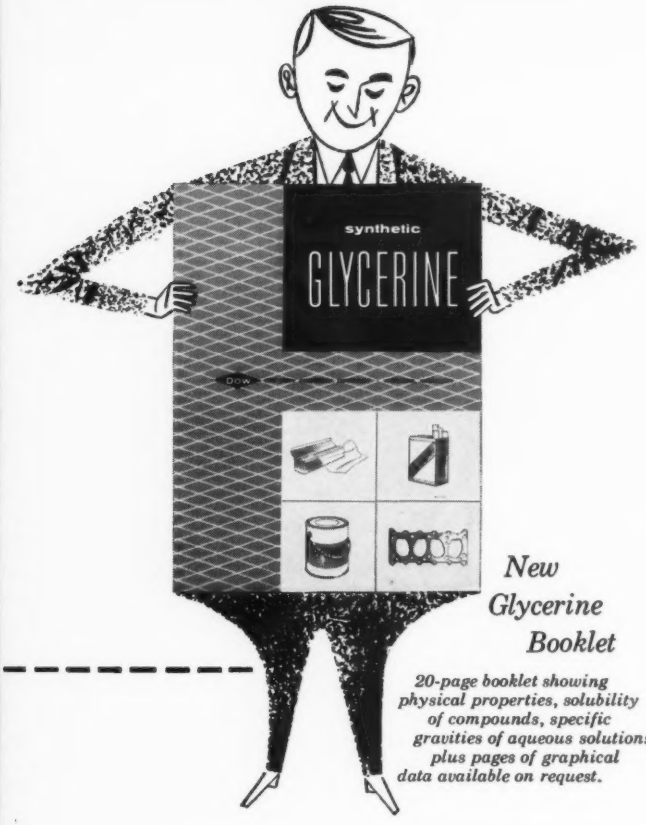

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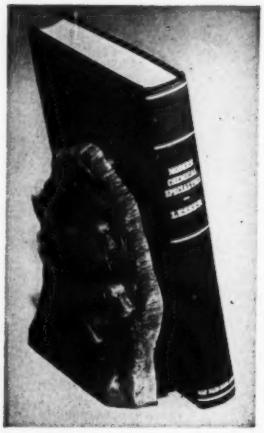

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INSECT RESISTANCE

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THE resistance of insects to insecticides is one of the most serious and baffling problems facing entomologists in this country today. Long ago entomologists recognized that some insects were adept at adjusting themselves to meet man's attempts to control them through the use of chemicals.

Resistance to insecticides was first observed in agricultural insects, namely fruit insects. A number of cases of such resistance are cited in the critical review of the literature made by Babers (1949) and Babers and Pratt (1951). Apparently the first case was recorded by J. B. Smith in 1897. However, it remained for Melander, who in 1908 observed the failure of lime-sulfur to kill all San Jose scales (*Aspidiotus perniciosus* Comst.) on trees, to call attention in 1914 to the possibility of resistance in insects becoming a serious problem. In 1910 Quayle observed that the California red scale (*Aonidiella aurantii* (Mask.)), and the black scale (*Saissetia oleae* (Bern.)) in certain areas were more difficult to kill with hydrocyanic acid fumigation. In 1925 he called attention to the unsatisfactory control of the citricola scale (*Coccus pseudomagnoliarum* (Kuw.)) with hydrocyanic acid in a small area in California. In 1928 Hough found a strain of the codling moth (*Carpocapsa pomonella* (L.)) that could enter apples sprayed with arsenicals more readily than could the normal insects. In the same year Boyce developed strains of a fruit fly, *Drosophila melanogaster* Meig., that were resistant to hydrocyanic acid. In 1942 Boyce and Persing found resistance to tartar emetic sprays by a strain of citrus thrips (*Scirtothrips citri* (Moult.)).

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Greenhouse Pests

GREENHOUSE PESTS. – Resistance of the two-spotted spider mite (*Tetranychus telarius* (L.)) was recognized in 1947 following their sensational control with aerosols containing HETP, TEPP, or parathion. In 1948 the resistant mites were prevalent in the East, being spread through the sale of rose plants from an infested greenhouse. Floyd Smith at Beltsville, Md., has found that these spider mites have become resistant to many of the new insecticides after repeated application and one to three years' use (Table 1). Of considerable interest is the record of a colony from a single rose plant in an otherwise clean house that was still highly resistant to parathion after eight years (1948-56) with no miticide treatment. Taylor and Smith have concluded that the resistance trait in this mite is inherited, and that it can be transmitted by either the male or the female parent.

Table 1. Resistance of two-spotted spider mites to insecticides (Aerosols)

Insecticide	Year put into commercial use	Year first showing resistance
HETP, TEPP, parathion	1947	1947
Sulfotepp	1948	1953
Ovex	1949	1953
Schradan, demeton	1950	1953
Aramite	1950	1953
Aramite plus schradan	1953	1954
Mitox	1953[1]	1954
Chlorobenzilate	1953[1]	1954
Rohm & Haas FW-293 (spray)	1954[1]	1955

[1] Resistance developed before recommended for commercial use.

Housefly Resistance

PESTS of Man and Livestock. – You are all familiar with the phenomenal success with DDT for the control of the house fly in 1945, and how within five years this insect became so resistant to DDT that it had little value in many localities throughout the country. For a time it appeared that DDT-synergist combinations might solve the house fly problem, but the flies became resistant to the combination. Subsequently the house fly became resistant to other chlorinated hydrocarbon insecticides, and a shift was made to organic phosphorus compounds, including malathion, Bayer L 13/59, Diazinon,

Resistance of insects to insecticides is one of the most serious problems facing entomologists today. A broad research program is required to meet this challenge of the insect world.

and TEPP. An outstanding development has been the use of these materials in baits. Recently Diazinon and malathion have been recommended as residual barn sprays.

In 1949 DDT failed to control the salt-marsh mosquitoes *Aedes taeniorhynchus* (Wied.) and *sollicitans* (Wlkr.) in several areas in Florida. By the summer of 1955 these mosquitoes had also developed resistance to BHC and dieldrin to such a degree in the intensively treated areas that control with these materials was also unsatisfactory. Research has shown that malathion for the control of adults and parathion for larvae are highly effective substitute materials for use on these resistant species.

Studies by Gjullin and Peters in the San Joaquin Valley in California in 1952 showed a high degree of resistance to DDT in larvae of *Aedes nigromaculis* (Lud.) and *Culex tarsalis* Coq. In 1953 and 1954 Gjullin and coworkers demonstrated that EPN was highly effective against resistant mosquito larvae in California and that malathion gave good results when used in sprays and fogs against resistant adults.

Of great concern is the recent report by the U. S. Public Health Service of resistance of the common malaria mosquito *(Anopheles quadrimaculatus* Say.) to BHC, dieldrin, and chlordane in Bolivar County, Miss. Some entomologists believe that this resistance has resulted from continuous exposure to the agricultural chemicals that have been so widely used in that part of the country. Fortunately DDT is still an effective adulticide against this species.

Mention should be made that the northern house mosquito *(Culex pipiens* L.) as well as *Psorophora confinnis* and *P. discolor,* are resistant to DDT. The last two species have also been found resistant to dieldrin in Mississippi.

Household Insects.—The widespread occurrence of resistance in house flies and certain mosquitoes to DDT treatments that were formerly outstanding has already been discussed.

Roach Resistance

IN 1952 Heal and Babers found a strain of the German cockroach *(Blattella germanica* (L.)) from Texas that was about 200 times as resistant to chlordane as normal roaches and also highly resistant to DDT. It is believed that this resistance is fairly widespread. Strains of this species have also been reported to be resistant to chlordane, lindane, dieldrin, pyrethrum, and to pyrethrum plus piperonyl butoxide. Where these materials fail to give adequate control, malathion and Diazinon may be used as spot treatments.

An increasing number of reports indicate difficulty in controlling fleas, particularly the cat flea *(Ctenocephalides felis* (Bouche)), with DDT and other insecticides. Though chlordane, DDT, methoxychlor, and pyrethrum are recommended for use in homes, they do not always furnish good control. The newest material for control of fleas is malathion, which is used as a dip or dust on animals, in kennels, and for spot treatment in homes.

DDT-resistance in the bed bug *(Cimex lectularius* L.) is becoming fairly widespread. Lindane sprays have been recommended for the control of resistant strains. Because of reports of failure to obtain satisfactory control with lindane, it is suspected that resistance to this material is developing. Malathion is highly effective against resistant bed bugs and eventually may be recommended for treatment of baseboards and other hiding places.

In New Jersey the American dog tick *(Dermacentor variabilis* (Say)) was reported by Hansen to have become resistant to DDT in 1955.

In the laboratory Eddy and coworkers found that the human body louse *(Pediculus humanus humanus* L.) could develop a high resistance in 25 generations when maintained on cloth impregnated with 0.001 percent of DDT. Mortality was very low after initial exposures, but resistance developed. Resistant lice in Korea and other parts of the world are being controlled effectively with 1 percent lindane and pyrethrum powders.

In Illinois in 1950, Bruce and Decker found that the larvae of filter flies *(Psychoda alternata* Say) became resistant to DDT, which had previously given excellent control. Initial chlordane treatments were effective against resistant larvae, but later ones failed.

Resistance Trends

TRENDS in Resistance.—The foregoing review of examples of insects that have become resistant to insecticides leads to several important conclusions. It is clearly evident that many of our most important insect pests are not only resistant to DDT but to other chlorinated hydrocarbons, all of which were so outstandingly effective at first. This failure of the chlorinated hydrocarbon insecticides has caused entomologists to turn to the highly effective organic phosphorus materials. In general they have been quite satisfactory, but some pests, particularly the mites, have become resistant to them. Resistant species are dispersed among several orders of arthropods — Hemiptera, Diptera, Coleoptera, Lepidoptera, Siphonaptera, Anoplura, and Acarina. Many species are now under suspicion, and there is every reason to believe that additional insect and mite pests will become resistant as the use of insecticides is continued year after year.

Origin and Development of Resistance.—The general occurence of such an important phenomenon as insect resistance naturally causes one to be curious as to how it originates and what are the developmental steps. Insect resistance to insecticides may originate in several ways:

(1) Selection by the chemi-

cal of the most resistant individuals in a population. The resistant individuals interbreed and transmit this characteristic to their offspring. The chance of such interbreeding is increased when the insecticide is widely used and most of the susceptible individuals are killed. The continued exposure of the resistant progeny to the same insecticide results in progressive strengthening of the resistant characteristic in the genetic makeup of the entire population.

(2) Action of the insecticide in selecting those naturally occurring mutants possessing factors conferring some degree of resistance. The resistant progeny eventually become dominant.

(3) Production of resistant mutations arising from the action of repeated sublethal dosages of insecticide on the insect.

Resistance to an insecticide is usually far advanced before investigations can be carried out; therefore, much reliance is placed on laboratory studies even though the factors of selection may be different from those that occur naturally. Metcalf (1955), in discussing the development of resistance to a toxicant by the house fly under continuous selection, refers to two stages – (1) an initial period of selection during which a five- to ten-fold increase in resistance may be attained in 20 to 30 generations of adult selection, or 5 to 10 generations of combined larval and adult selection, and (2) a period of very rapidly intensified resistance which may increase several times with each succeeding generation and attain levels of 100 to 1000 times normal within 6 to 20 further generations. Of outstanding significance is the fact that the development of tolerance to a given insecticide seems to pre-dispose an insect to the subsequent rapid development of resistance to other insecticides, particularly those closely related structurally. This situation has aggravated efforts to control resistant pests with available alternate materials.

Biochemistry

BIOCHEMISTRY of Resistance. – Much work has been done on the biochemistry of resistance in house flies (Metcalf 1955). Early workers envisioned rather simple explanations, including the idea that a thick cuticle of the pulvilli and intersegmental membranes of the feet inhibited the rate of DDT absorption. This hypothesis was disproved, however, when the injection of DDT into the body cavity of resistant flies did not alter their resistance. Other workers have reported on minor differences in morphology, length of life cycle, biotic potential, and preferential resting habits, but apparently they are not positively correlated with specific insecticide resistance.

Metabolism Factor

SOME of the most fruitful studies determining the nature of DDT resistance have been on its metabolism. Sternburg and coworkers first showed that resistant flies were able to degrade DDT to its nontoxic metabolite, DDE, whereas there was little or no change in susceptible flies. It has been demonstrated that surviving flies always contain more DDE than the dead flies, and that the more resistant the strain of flies the more readily do they accomplish the detoxification. Perry and Hoskins are of the opinion that the DDT-resistant fly is protected by three mechanisms – detoxification to DDE, detoxification to one or more unidentified compounds, and storage of unchanged DDT in parts of the insect where it has no appreciable harmful effect. Sternburg and Kearns have shown that an enzyme is involved in the dehydrochlorination of DDT to DDE in DDT-resistant flies. It has also been shown that the same type of enzyme action is not involved in the resistance of certain other species to DDT. Although much good work has been done and a great deal of intensive research is under way, no one has yet been able to completely explain the mechanism of insect resistance to insecticides.

Impact of Resistance Problems. – An ever-increasing number of agricultural, household, and other insects are becoming resistant to insecticides in localized areas throughout the country. As resistance becomes more widespread, it is predicted that the following serious problems will arise:

(1) The first reaction of a user not obtaining the usual degree of control with an insecticide is to increase the dosage or the number of applications or both. This response wastes his time and money.

(2) Increased amounts of insecticides may leave residues on the marketable crop that exceed the tolerances established by the Food and Drug Administration in fulfilling the requirements of Public Law 518. If these tolerances, which have been established on the basis of need and safety to the consumer of foods, are exceeded, the crop is subject to seizure.

(3) Failure to obtain good control with insecticides causes growers, pest control operators, and others to lose confidence in entomologists, county agents and consultants who provide them with insect control recommendations.

(4) In desperation some users may seek new materials that have not been thoroughly tested or recommended and run into various difficulties.

(5) Not being able to anticipate a reasonable period of usage of new insecticides on account of changes in recommendations to meet resistance problems, manufacturers are faced with a financial risk that may thwart research in this field.

(6) The stockpiling of insecticides in different parts of the country to meet control demands that cannot be determined too well in advance is likely to be curtailed to such a degree that emergencies cannot be met. Distributors cannot afford to stockpile materials that are likely to be superseded by new ones.

(7) The development of resistance to an insecticide is discouraging and demoralizing to re-

search workers. In addition, it increases the costs of research to meet urgent control needs.

Overcoming Problem

OVERCOMING Resistance Problems.—There are several avenues open to help meet this national emergency:

(1) Fortunately resistance to insecticides generally shows up first in small areas, so that there is time to make adjustments in control programs. In recent years a number of highly effective materials have been available for the control of each pest. The use of alternate materials to meet several serious resistance problems has permitted time for the development of better control measures.

(2) Although a given insecticide may prove ineffective against a certain pest on account of resistance, it still may be very effective against many others and usable without creating an additional hazard. In other words, insects vary greatly in their capacity to become resistant to certain insecticides.

(3) Many new insecticides are being produced, and doubtless some of them will, at least temporarily, help meet resistance problems.

(4) To lessen the opportunity for the development of insect resistance, insecticide applications should be carefully timed, and as few applications made as is consistent with good control.

(5) Cultural control and sanitation practices should be utilized to the maximum extent possible in reducing destructive insect populations.

(6) Advantage should also be taken of the various biological control agents. When insecticides are used, their choice and timing should be such that they will be least harmful to parasites and predators.

(7) Utilization of varieties of crop plants that are resistant to insect attack.

Future Needs in Research.—More research is needed on the mode of action of insecticides and on the mechanisms involved in the resistance of insects to different insecticides. Such information would be of benefit in seeking ways to avoid or overcome resistance. The possibilities of synergists or other materials to nullify resistance should be determined. In order to meet urgent control problems a constant study must be made of new materials for the control of insects and mites. Perhaps some insecticides or miticides will be developed to which they will not become resistant. Consideration should also be given to research on the use of two or more insecticides having entirely different modes of action, applied either in combination or as alternate treatments. To assist in recognizing the development of resistance in a pest, entomologists should conduct studies to establish mortality curves with insecticides in current use or promising for future use in widely separated areas to serve as a reference standard in the future. Of considerable benefit too would be more efficient methods of distributing insecticides. Of more than passing interest is the report in Canada of a parasite of the codling moth that is resistant to DDT. This suggests a new phase of research which might well receive considerable attention. There is also need for further evaluation of cultural control practices and biological control agents—parasites, predators, and diseases of insects. A combination of several control measures could cut down the number of insecticide applications required and perhaps slow up the development of resistance. For some crops the ultimate answer may lie in the development of plant varieties that are immune to insect attack. Certainly a broad research program is required if we are to meet this challenge of the insect world.

Summary

SUMMARY.—The resistance of insects to insecticides is one of the most serious problems facing entomologists today. A review of the current status of resistance to the new insecticides points up the significance of this phenomenon among insects of agricultural, household, and medical importance. Each year additional pests are becoming resistant to DDT and other chlorinated hydrocarbon insecticides that heretofore provided outstanding control. The development of tolerance to a given insecticide seems to predispose an insect to rapid development of resistance to other insecticides. This failure of the chlorinated hydrocarbon insecticides has caused entomologists to turn to the organic phosphorus materials. In general they have been quite satisfactory, but some pests, particularly the mites, have become resistant to them.

Many problems arise when users of insecticides meet up with resistant insects. Higher dosages or more applications are used, which result in waste of time and money and perhaps residues on marketable crops that exceed established tolerances. The insects may cause damage before effective substitutes can be applied. Growers and others lose confidence in those making control recommendations, and in desperation may use unapproved materials. Manufacturers face greater financial risk in developing insecticides, not knowing how long they may be used until resistance appears. Since distributors cannot afford to stockpile materials that are likely to be superseded by new ones, growers may not be able to meet emergency insect outbreaks.

When an insect becomes resistant to an insecticide, alternate materials should be used until better control measures can be worked out. It is unlikely that any one material will suddenly become ineffective against a large number of pests. Many new materials are being produced that will help us meet resistance problems. Whenever possible, cultural and biological methods should be used to reduce destructive insect populations. A broad research program

(*Turn to Page* 159)

Determination of

Flash Point of Solvent Type Waxes

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MANY fire departments of the larger cities require approval of the flash points of wax products available to the public. These fire department regulations are based on test methods which, although satisfactory for use on solvents, fail to produce significant results when applied to wax products. Solvents are chosen which conform to the fire department regulations, but the experimental flash point of the wax product usually differs from that of the solvent. These discrepancies led to a cooperative investigation of methods for determining flash point.

The flash point of a flammable material is often defined as that temperature at which the material gives off vapors in sufficient quantities to form the minimum explosive mixture with air. Downey (1) more appropriately defines the flash point as "the empirical temperature at which it will ignite momentarily on the introduction of a flame or a spark, when the oil is heated at a given rate, in an apparatus of given construction and dimensions so designed that *localized overheating* does not take place, and a definite igniting agent is applied in a given manner."

In 1862 Great Britain passed the first flash point specification, but no means of testing was specified until 1868 when an open cup tester was prescribed. The Abel closed tester was proposed in 1875 and is still considered the official tester of Great Britain. In 1880, Pensky of Berlin modified the Abel instrument by incorporating a clockwork mechanism for introducing the test flame. The modified instrument, the Abel-Pensky tester, is quite similar to the Pensky-Martens tester used in the United States.

Allen and Crossfield (2,3) in 1913 classed the types of testers as open cup, semi-closed, closed cup, open cup with saturated vapors, vapor pressure testers and distilling testers. Only the open and closed cup testers have been adopted for routine determinations. Many proposed testers, too numerous to list, have been described in the literature, but none of the recent modifications have been adopted as standard instruments. Many special purpose testers (4,5,6) incorporate an electric spark as the ignition source.

Control Factors

ALLEN and Crossfield (2,3) list the factors to be controlled in determining flash points as; (a) uniformity of repetitions, (b) barometric pressure, (c) shape and size of cup, (d) rate of temperature rise, (e) standardization of thermometer, (f) depth of immersion of thermometer, (g) stirring of test liquid, (h) size and position of test flame and (i) duration of exposure of test flame. These authors recommend the use of the Abel-Pensky tester with stirrer or the U. S. model, the Pensky-Martens instrument. Only closed cup testers equipped with stirrers will produce meaningful flash points. Other reviews (7,8) are in agreement with the findings of Allen and Crossfield.

Stirring of the test liquids is especially important in heavy bodied materials such as paints. Busker (9) reported that the flash points of paints by the Pensky-Martens tester are 12-15°F. higher than by the Tag Closed Cup tester when the heating rates with both instruments are maintained at 1.6 to 2.0°F. per minute. Both testers, however, produce approximately the same flash point on mobile liquids. The Tag Closed tester requires no stirring while the test liquid is stirred at 100 R.P.M. in the Pensky-Martens instrument. The well-stirred material in the Pensky-Martens tester is maintained at a fairly uniform temperature which is correctly represented by the thermometer. Busker (9) proved that heat was not uniformly distributed through the sample by placing thermometers at various positions in the cup of the Tag Closed apparatus and recording the temperatures in these positions.

*Paper presented before the 42nd midyear meeting, Chemical Specialties Manufactures Association, Chicago, May 22, 1956.

**This investigation was carried out under the auspices of A.S.T.M. Committee D-21 on Waxes and Floor Finishes. This work is a result of the cooperative efforts of the following three laboratories: S. C. Johnson & Son, Inc. — D. E. Whyte, W. K. Miller, R. H. Simon; National Research Council of Canada — A. K. Light; U. S. Testing, Inc. — C. A. Gerardi.

This investigation was instrumental in the establishment of the federal specification for the determination of the flash point of pigmented materials (10) which differs from the standard ASTM Pensky-Martens method primarily in that the rate of temperature rise is maintained at 1.8 to 2.2°F. per minute rather than 9 to 11°F. per minute.

Busker (9) also stated that "the flash point of a paint is higher than that of its volatile solvent because of the lowering of the vapor pressure of the solvent when the heavier paint vehicle goes into solution." The flash point of Varsol, a thinner, was determined to be 94°F. while that of a paint containing 305 g. of iron oxide paste in oil and 60 ml. of Varsol was 112°F. The flash point was raised markedly by the less volatile constituent, but the solvent in this case was the minor constituent.

Other investigators (6,11,12, 13) have recognized relationships between flash points and vapor pressure. Ormandy and Craven (11) found linear relationship between the flash point and boiling point of hydrocarbons when both were expressed in absolute temperature. By combining his relationship of flash point (°K) = 0.736 × boiling point (°K) with that of Ramsey and Young's law, he deduced that the vapor pressure of any hydrocarbon would be approximately 12 mm of Hg at its flash point.

Williams (12) stated that the conventional flash point test is a measure of the temperature at which a fuel reaches a vapor pressure which gives an inflammable mixture, and that this vapor pressure was of the order of 7 to 10 mm of Hg. Redwood's Handbook (14) describes a Salleron-Urbain type of flash point meter which measures the vapor pressure. Liquids showing a pressure of not more than 64 mm of water at 35°C., should be passed as safe.

Mack et al (6) define a minimum explosive mixture as one that contains twice as many oxygen atoms as are required for complete combustion. From vapor pressure data the temperature can be calculated to which a given pure organic compound must be brought in order that the saturated vapors will furnish mixtures with air which are just explosive. The author's experimental flash points are in most cases in fair agreement with the calculated flash points.

Wright (13) used the flash point elevation as a means of determining molecular weight. One mole of solute in 100 g. of alcohol will raise the flash point 7.7°C. The author devised an apparatus for determining the flash point with a reproducibility of 0.05°C. The entire apparatus was thermostatted, and the heating rate was only 1°C. per 15 minutes. The liquid was stirred by an air current. The apparatus was very carefully designed and probably is capable of much better reproducibility than the standard testers, but it is not suitable for routine determinations. The author reports excellent results on molecular weight determinations by using high concentrations of solute.

The literature survey confirmed our belief that there is a definite relationship between flash point and vapor pressure. Nonvolatile solutes such as wax would be expected to lower the vapor pressure of the solvent, but only slightly, with a negligible increase in flash point.

Experimental flash points of wax products by the standard testers actually are lower than those of the solvents, apparently because the test methods fail when applied to materials other than thin liquids. This failure can be attributed to the high viscosity which interferes with the normal convection currents in the flash cup.

Wax Flash Points

THE flash points of three solvent type waxes were determined by the procedures described in the A.S.T.M. Standards including a tentative procedure for the Tag Open Cup method. Since the specified heating rate of 9 to 11°F. in the Pensky-Martens method cannot actually be realized on viscous products, the maximum attainable heating rate (4 to 5°F. for most products) was used in the tests. Three products were chosen for the tests – a thin auto polish, a furniture polish of medium viscosity and a viscous floor polish. The results of flash point determinations on these products by the standard methods are compared in Table I with those on the solvents used in their manufacture.

The results obtained by the A.S.T.M. methods on the automobile and furniture polishes are

Table I. Flash point of wax products by A.S.T.M. Standard procedures

	Flash Point °F.			
		Pensky-Martens, D93		
Sample	Tag Closed D56	Standard Procedure	Cut-Back Asphalt Procedure	Tag Open D1310-54T
Auto polish	89	90	96	102
Auto polish	90	90	96	102
Solvent	92	92	96	102
Solvent	91	92	96	102
Furniture polish	98	102	104	106
Furniture polish	98	98	104	104
Solvent	99	100	104	112
Solvent	99	98	106	110
Floor polish	58	62	86	87
Floor polish	50	76	78	83
Solvent	87	90	90	100
Solvent	87	88	90	100

Table II. Effect of stirring rate on the Pensky-Martens flash point

Sample	Flash Point °F.					
	No Stirring	100 RPM	200 RPM	300 RPM	500 RPM	700 RPM
Floor polish	75	75	86	91	88	88
	76	79	88	93	88	88
		77	86	91	88	88
		81	82	91	88	88
		80	87	90	88	89
		76	85	91		89
		84		91		
				93		
				91		
Solvent	86	89	89	88	88	87
		91	90	88	87	86
		91		88		88
		90				
		90				
		91				
		91				

slightly lower than the values obtained on their respective solvents. Especially low values are obtained on the highly viscous floor polish by the standard procedures.

Preliminary work indicated that the discrepancy between the flash points of the product and its solvent was probably caused by local overheating in the product. The viscous material in direct contact with the cup becomes hot enough to produce the vapor required for a flash, while the center of the mass around the thermometer is still relatively cool. The Pensky-Martens apparatus appears to be the best of the standard methods for determining the flash points of viscous products because the sample can be stirred to reduce local overheating. The A.S.T.M. procedure for the Pensky-Martens method requires that the sample be cooled to at least 30°F. below the expected flash point before the test, and the heating rate be maintained at 9 to 11°F. per minute. Experiments in our laboratories have proved that cooling the sample below room temperature and a rapid heating rate increase the susceptibility to local overheating. The Pensky-Martens method was modified to require that the test be started at room temperature and a heating rate of 2°F. per minute be maintained. These modifications improved the results, but the experimental flash point of the floor polish was still about 5°F. lower than that of its solvent.

Modified Apparatus

IN AN effort to improve the results further, several modifications in the apparatus were tested. S. C. Johnson & Son, Inc., designed and fabricated a thick-walled aluminum flash block with exactly the same dimensions as the Pensky-Martens cup but with outside dimensions such that it could be heated by a 1-liter Glas-col mantle. It was believed that the thick wall of the cup and the overall heating of the mantle might result in a more even transfer of heat to the sample than that afforded by the Pensky-Martens apparatus. The modified cup, however, produced approximately the same results as the Pensky-Martens tester under the same conditions of stirring and heating rate. One advantage of the modified instrument was that it could easily be disassembled and placed in a refrigerator to cool in preparation for a subsequent test.

Several variations were tested in an effort to obtain more efficient stirring in the Pensky-Martens method. Slightly higher and more reproducible results were obtained on the floor polish by stirring in a clockwise direction (with an upward thrust) than by stirring with counterclockwise rotation. The National Research Council of Canada designed a propeller to afford better mixing than that furnished with the instrument, but the experimental flash point was not improved. Angle stirring was compared with vertical stirring, and approximately the same results were obtained by both means.

The rate of stirring, however, was found to have a marked effect on the experimental flash point of the floor polish. Comparisons were made of the results obtained by the Pensky-Martens tester on the product and its solvent at a heating rate of 2°F. per minute and stirring rates of 0, 100, 200, 300, 500 and 700 R.P.M. The results of these tests are shown in Table II.

Effect of Stirring

THESE results prove that the stirring rate has a pronounced effect on the magnitude of the experimental flash point of a viscous, solvent type wax product. It is indicated that an optimum stirring rate exists for each material, depending on the viscosity and homogeneity of the sample. Slow stirring (0-200 R.P.M.) of the floor polish a viscous mixture, apparently does not produce the necessary mixing to insure good heat transfer and low values result. Slightly low values are also obtained at high (500-700 R.P.M.) stirring rates, probably because the vigorous agitation creates excessive vaporization. The flash point of 91°F. obtained at 300 R.P.M. is believed to be a realistic one because it compares favorably with that of the solvent.

The stirring rate producing the highest flash point obviously depends on the viscosity and homogeneity of the sample. The maximum flash point of the solvent, for example, was obtained at 100 R.P.M. in contrast to the rate of 300 R.P.M. required to produce the highest flash of the viscous floor polish. It should be emphasized that the purpose of this investigation is not to obtain the highest possible flash point but a value which compares with that of the solvent. Since the maximum flash point obtained on the viscous products most nearly fulfills these requirements, the stirring rate producing the highest flash point is referred to as optimum stirring rate.

The effect of reducing the viscosity and improving the homogeneity of the mixture was tested by preparing a product of the same wax content as the floor polish but using a soluble wax (I.G.V wax from Gersthofen). The flash point of the resulting clear product was compared at various stirring rates with that of the solvent used in its preparation. The results are shown in Table III.

Table III. Comparison of the Pensky-Martens flash point of a soluble wax product with that of its solvent

Sample	Flash Point °F.*			
	No Stirring	100 RPM	300 RPM	700 RPM
Clear product	86	88	87	86
Solvent	86	88	86	86

*The reported value is an average of at least two results.

By making a thinner (less viscous) mixture of the same solids content as that of the original floor polish, the optimum stirring rate was lowered from approximately 300 R.P.M. to about 100 R.P.M.

It appears that the most effective stirring rate depends on the viscosity, which, in turn is dependent on the non-volatile content and solubility of the wax in the solvent. It is not practical in a standard routine method to stipulate a flexible stirring rate depending on viscosity, non-volatile content or other properties. A stirring rate of 300 R.P.M. produces a flash point comparable to that of the solvent on the most viscous sample tested. It seemed desirable, therefore, to compare the flash points of the thinner products at this stirring rate with those of their solvents. Hence the flash points of samples of the auto, furniture, and floor polishes and the solvents used in their production were determined by the Pensky-Martens tester at a heating rate of 2°F. per minute, starting at a temperature of 70-80°F. and stirring at 300 R.P.M. The results of these tests by the modified method are compared in Table IV with those obtained on the same materials by the exact A.S.T.M. procedure.

These results indicate that satisfactory flash points are obtained on all of the tested products by the modified procedure in contrast to the lower results on the same materials by the Tag Closed Cup or standard Pensky-Martens methods. Further, the reproducibility of the results at 300 R.P.M. on the more viscous materials is markedly improved over that obtained at the slower stirring rate. The flash point of the floor polish can be reproduced within 2°F. even between laboratories. The solvents exhibit only slightly lower flash points at 300 R.P.M. than at 100 R.P.M. as the standard method requires. For practical purposes we have recommended that the modified Pensky-Martens method with a stirring rate of 300 R.P.M. be adopted for all wax products. In addition, the sample should not be cooled below 70°F. and the heating rate should be maintained at approximately 2°F. per minute.

Since the literature survey had indicated that there was a definite relationship between vapor pressure and flash point, a study was made of the effect of a non-volatile solute on the vapor pressure of a solvent and its subsequent effect on the flash point. A pure hydrocarbon, n-nonane, flashing at about 92°F., was procured to be used as a solvent in the study. By using a pure solvent, errors normally caused by loss of the more volatile constituents during the measurements should be negligible.

Two wax products, each containing 11 percent solids, were prepared using n-nonane as the solvent. One product contained a soluble wax such that a clear, thin solution was obtained. The other experimental product was prepared from the same wax base as that of the floor polish. (The resulting sample was much more viscous than the normal floor polish and could be inverted in a bottle without flowing.) A third sample was prepared by mixing 25 g. of mineral oil (Nujol) and 75 g. of n-nonane.

The vapor pressures of the three samples and the pure solvent were determined over a range of temperatures (150 to 110°C.). The measurements were made by means of an isoteniscope completely submerged in a heating bath. The apparatus was connected to a condenser in order to prevent distillation of solvent and a subsequent change in composition of the product.

Flash point determinations were made on each of the samples by the modified Pensky-Martens tester at two stirring rates, 100 and 300 R.P.M. and on the most viscous sample at 500 R.P.M. The flash points of the products are compared in Table V with the vapor pressures at an arbitrarily chosen temperature of 120°C.

(*Turn to Page* 159)

Table IV. Comparison of the flash points of wax products and their solvents as determined by different methods

Sample	Flash Point °F.*			
	Tag Closed Cup	Pensky-Martens		
		Standard	Cut-Back Asphalt	Modified
Furniture polish	98	98	104	102
Solvent	99	99	105	100
Auto polish	90	90	96	94
Solvent	92	92	96	92
Floor polish	60	78	82	91
Solvent	87	91	90	88

*Each reported value is the average of at least two results.

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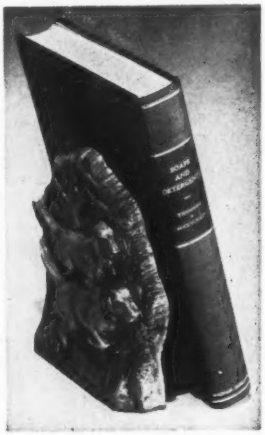
...about detergents

SOAPS AND DETERGENTS

by E. G. Thomsen and John W. McCutcheon



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Trends in Brake Fluid Laws

Brake fluid legislation has changed considerably in past six months. More state laws foreseen in next two or three years. States may ban fluids not meeting SAE heavy duty standards in future.

By Robert L. Ackerly*
Cummings, Sellers, Reeves & Conner
CSMA General Counsel
Washington, D. C.

THIS paper apparently had to have a title and with a complete lack of imagination I made an outright theft of the title of the paper delivered by Dr. Lederer before the CSMA last December and published in the May, 1956 issue of *SOAP and Chemical Specialties*. It may not be inappropriate, however, since the picture of brake fluid legislation has changed rather considerably in the past six months and trends are ever changing and must be examined frequently if they are to serve a purpose. Even now these comments are somewhat premature since the precedents in brake fluid legislation are comparatively few. However, by reviewing the laws now in effect and evaluating the interest shown by some state officials, as well as interested private groups, we can perhaps with some hope of accuracy project these trends and predict the brake fluid legislation picture as it will evolve in the next two or three years.

From the regulatory standpoint one basic principle in this field has been clearly established. That is, that the sale of brake fluids not meeting the SAE heavy-duty standard – 70R1 – will be prohibited by state legislation. (Mississippi alone permits the sale of moderate-duty fluids.) The problem confronting the state legislatures is to enact a statute which will accomplish this purpose without cost to the state. Since the SAE standards are subject to continual review and revision the establishment of the present 70R1 standard by statute has not been desirable. Nevertheless, three states have enacted such legislation. The power to establish these standards can be delegated to an administrative official provided the legislature establishes a guide or limitation for the administrative regulations. This approach also poses a problem to manufacturers who should be protected from officials who may arbitrarily set standards which are too high or too low. The states need a satisfactory method of enforcement, yet, there is resistance to adding additional expenses to already over-burdened budgets. Manufacturers rightfully feel that they should not defray the cost of enforcing a law through high registration fees when the benefits of the law accrue to the general public. With these problems in mind, we can consider the past, present and future of brake fluid legislation.

There are four basic types of statutes which have been enacted thus far. In the state of New Jersey the Motor Vehicle Commissioner has by regulation under a general enabling statute adopted the heavy duty standard. Minnesota and North Carolina have with a very simple form of statute empowered an administrative official to set the standards. In these two states, regulations have been issued requiring the submission of samples and either a laboratory report in one case or the certificate of the manufacturer in the other case showing that the fluids to be registered comply with the SAE heavy-duty standard. While these two statutes have worked satisfactorily, they are a lawyer's nightmare. Without a legislative standard to guide the administrative official, without the requirement of a public hearing before the regulations are issued, and without the right to an administrative hearing before cancelling the permit or issuing a "stop-sale" order, there is always the danger of arbitrary and capricious action which would require time consuming and costly court review to be corrected. Fortunately in these two states the administrative officials have been conscientious and reasonable. In Tennessee, Mississippi and South Carolina legislation has been added to the Criminal Code making the sale of less than heavy-duty fluids a misdemeanor (Mississippi—mod-

*Paper presented at 42nd annual meeting, Chemical Specialties Manufacturers Association, Chicago, May 21, 1956.

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erate duty fluids may be sold).

California took a somewhat different approach by enacting a statute placing control of brake fluids under the Department of Agriculture. California decided to undertake complete testing of all brake fluids which will be conducted under the supervision of the chemist in the Department of Weights and Measures where the testing of motor oils and other products is conducted. The California statute is, from a legal standpoint, very sound, although certainly the fee provision is exorbitant. This statute provides for a minimum amount of labeling on the container without restrictive type size requirements. It requires the state official to issue a certificate authorizing the sale of a brake fluid on the certification of the applicant that the fluid meets the specifications issued by the Secretary of Agriculture. Thus there will be no delay in registering and marketing a new fluid. If subsequent tests prove that the fluid is below standard the certificate may be cancelled. The power of cancellation of the certificate to sell a fluid is a relatively simple yet highly effective method of enforcement. All proceedings are required by the Act to be conducted under the provisions of the California Administrative Procedures Act which requires a hearing before regulations may be issued. The California Act also requires a hearing after due notice before a certificate may be cancelled or before the Department may refuse to issue or renew a certificate. Except for the fee provision the California law follows generally the pattern of the CSMA model brake fluid bill.

Georgia Law

THE state of Georgia adopted the California pattern of legislation which was modified somewhat to bring it more closely in line with the CSMA model bill. Here, however, the manufacturer does not have the protection of a hearing on the regulations and the Commissioner is authorized to issue a stop-sale order if it appears to him that the Act has been violated. However, we have had two conferences with appropriate officials and anticipate reasonable but efficient enforcement including the eventual testing of each fluid sought to be registered. The Act spells out the procedure for seizure and condemnation of brake fluids which permits the manufacturer adequate court review in the event of an alleged violation. The initial suggested fee in this bill was reduced considerably before the bill was passed.

In the past two years the states of Oklahoma, Massachusetts and Michigan have considered brake fluid legislation but the Legislatures have not acted on the proposals. The Massachusetts and Michigan bills were of the simple type of statute along the line of the Minnesota statute. The Oklahoma bill was erroneously patterned after the anti-freeze legislation but indications are that the California type statute will be introduced at the next legislative session. Interest in brake fluid legislation has also been expressed in the states of Utah, Texas, Florida and Colorado.

Who's Behind Laws?

BEFORE attempting to predict which of the existing forms of legislation will be most popular it would be well to examine the sources of interest and the nature of the sponsors of the legislation. To date, the two most active groups have been the State Chapters of the American Automobile Association and last year the American Automobile Association in Washington approved brake fluid legislation as a matter of national policy for that group. In some states the legislation has been initiated by the State Automotive Wholesalers Association. The CSMA has not undertaken a positive program with regard to the introduction of legislation but has followed a policy of assisting those states which have indicated a desire for such a statute.

Perhaps the most potent force for the future will be the National Committee on Uniform Traffic Laws and Ordinances. This group appointed a brake fluid subcommittee last year to draft a provision for the National Uniform Motor Vehicle Code to regulate the sale of brake fluids. This draft will empower the motor vehicle commissioner to adopt regulations specifying standards for brake fluids. The recommendation of the brake fluid subcommittee is that sale of brake fluids be limited to heavy-duty type. The proposal of the subcommittee with some changes submitted by CSMA will be considered at the next meeting of the National Committee which is tentatively scheduled for July, 1956. Indications are that the National Committee will approve the recommendations of the brake fluid subcommittee. This proposal has been deemed to be generally acceptable to CSMA. However, since the final version of this proposal has not been acted upon, we cannot, of course, discuss it in any detail. It will undoubtedly fit the general pattern of the Uniform Motor Vehicle Laws and Ordinances but does not necessarily contemplate complete testing as a method of enforcement.

Uniform Code

THE Uniform Code has been adopted in varying degrees by a majority of the states. Section 12 of the Uniform Code which relates to equipment of vehicles will contain the brake fluid provision. This chapter has been adopted in the past in its entirety or large part by the following states: Alabama, Arizona, Arkansas, California, Colorado, Delaware, Florida, Georgia, Idaho, Indiana, Iowa, Kansas, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, New Jersey, New Mexico, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Utah, Virginia, Washington, West Virginia and Wyoming.

(*Turn to Page* 157)

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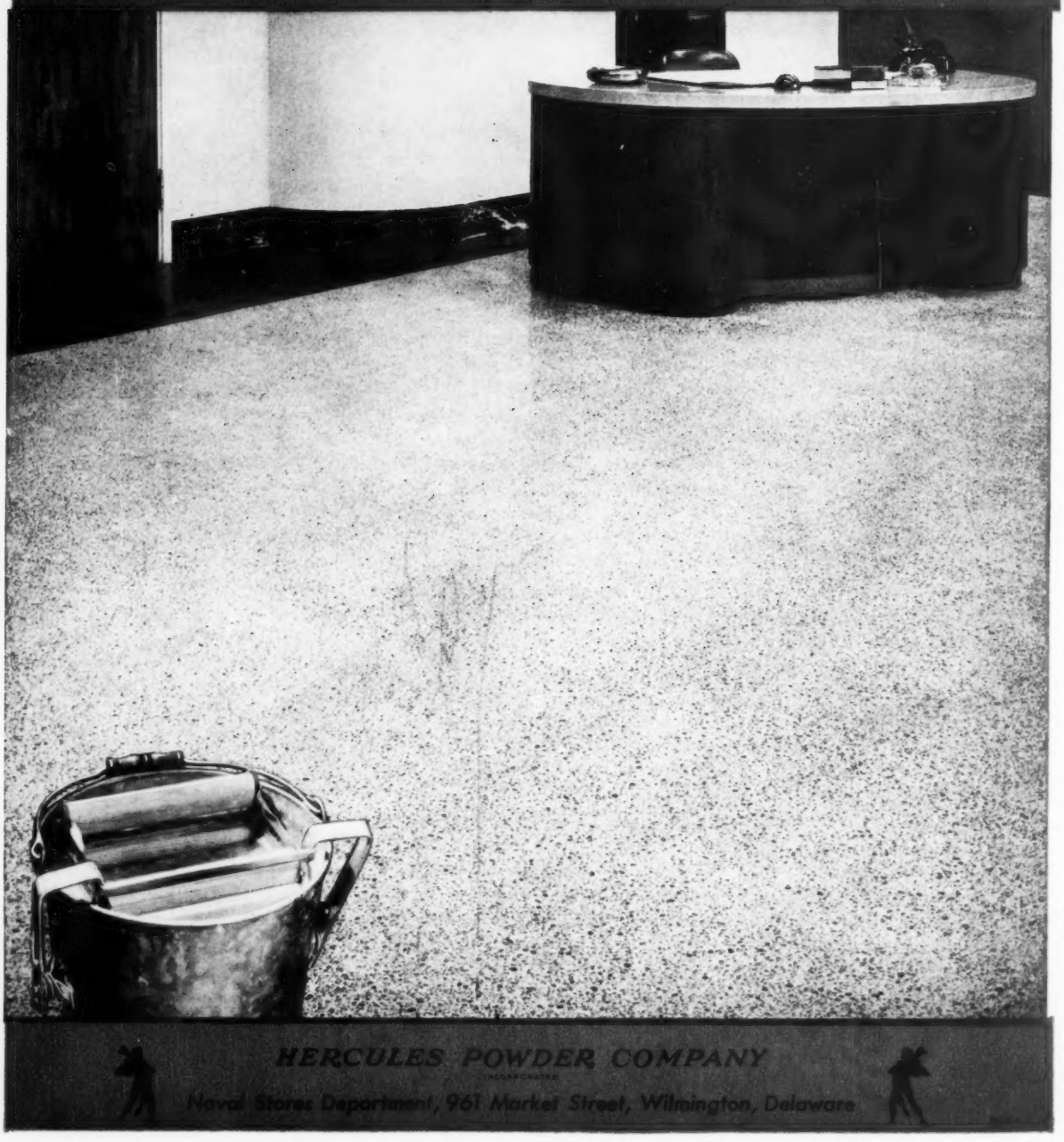

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Germicides to Eliminate Microbic Contamination

By Philip C. Trexler*
Associate Research Professor
Lobund Institute
University of Notre Dame
Notre Dame, Ind.

AT the University of Notre Dame, we have been engaged in research with germfree vertebrates, that is, animals free of demonstrable microorganisms. The germfree animal is of importance because control of the microbic population of an animal eliminates one of the big variables in the design of laboratory experiments especially as concerns the relationship of microorganisms to the host. These experiments encompass the entire field of infectious diseases, nutrition, and defense mechanisms. Furthermore, since an animal is determined by the hereditary material and the environment, more uniform specimens can be obtained as it is possible to control all of the factors in the environment. Thus, in a sense, the germfree animal becomes a more pure grade of biological reagent and as such is potentially useful in the same sense as reagent grade chemicals. The usefulness of the germfree animal in research has been demonstrated beyond question. It is my opinion that in the foreseeable future, the germfree animal will be used not only in research but in industry as well for both production and control.

The primary concern here is with the elimination of microbic contamination, rather than the germfree animal. This is of increasing importance to both the pharmaceutical and food industries because of the greater variety of production methods. Likewise the chemical and atomic industries have problems of contamination control similar to those with microbic agents. The germfree animal necessitates such a thorough elimination of contaminants that control procedures must rest upon a sound theoretical basis rather than an empirical one. Perhaps working from this viewpoint it may be possible to simplify technics and standardize apparatus so as to ease the application of control methods to both production and laboratory problems.

A brief consideration of the historical development (1 and 2) of the germfree vertebrate will help to explain why this animal is an excellent indicator of the complete elimination of microbic contamination. Germfree vertebrates have been reared in about a dozen laboratories. The same process has been used by all. A bird is obtained by sterilizing the egg shell and mammals are obtained by caesarean section. Both are placed in a sterile environment and fed sterile diets. Working from 1899 to 1913, Schottelius reared chickens for thirty days. Nuttal and Thierfelder in 1895 reared guinea pigs for 13 days. Küster in 1912-1915 reared a germfree goat for 35 days.

Microbe-free Animals

AS knowledge of dietary requirements increased, better results were obtained. Glimstedt in 1932-37 reared guinea pigs for two months and Balzam in 1937 reared chickens for the same length of time. Reyniers and Trexler in 1943 reported a germfree monkey four months old and chickens five months old. In 1946 (Reyniers et al.), reproduction in the germfree rat was reported. At the present time germfree rats and mice have been carried through seven generations. Aside from the initial observation that an animal can be reared without microbes, the most important accomplishment is reproduction to form a family, or line, all within germfree conditions. So far this step has only been taken at Lobund where several lines have been established, three of which are now being carried.

A germfree animal colony is a continuous rather than a batch process and this has a number of important advantages particularly for the common laboratory rodents. First, an animal must be killed to be examined completely for contamination. This is not always possible with an animal used for an experiment. More confidence can be placed in animals obtained from germfree stock in which exhaustive examinations have been made of earlier generations than in animals obtained from conventional stock.

Second, since the animals must be examined for the presence of virus, bacteria, moulds, and parasites, a variety of professional experience is required. The examination must be of the highest caliber as the animal presents an unusual situation since many defensive

Germicides increase utility of sterile room for raising germfree animals by treatment of protective garment in personnel lock, entire room and apparatus, and lubricating greases.

*Paper presented before the 42nd midyear meeting, Chemical Specialties Manufacturers Association, Chicago, May 21, 1956.

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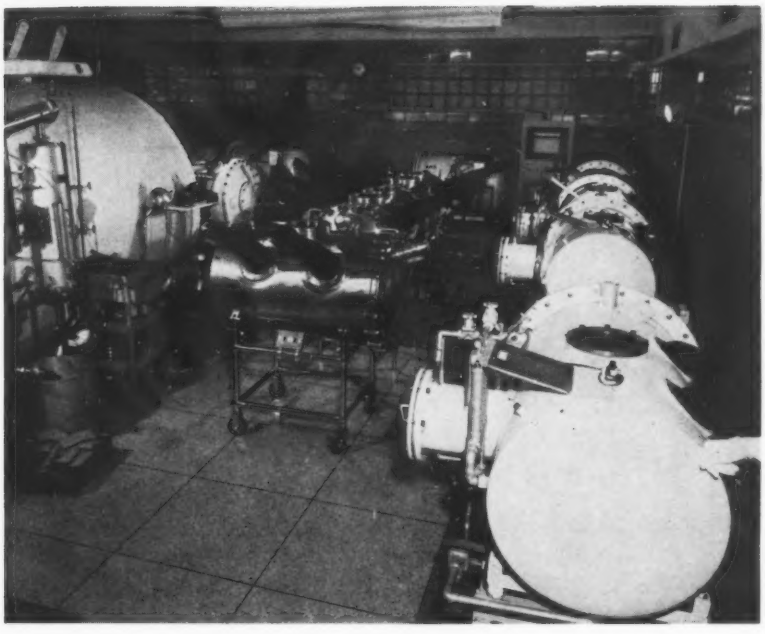

Figure 1. Upper rearing room in the germfree life laboratory. Rearing units in use to the right and under pressure test at the center of the photograph. Colony tank is at extreme left.

mechanisms are dormant (3). Parent stock may be sent to experts in many fields and the results of their examination will accumulate to form a sort of "pedigree." All users of these strains of animals will have the benefit of these "experts." The smaller laboratory may proceed with routine examinations by technicians thus easing the professional manpower shortage.

Finally, it is cheaper to suckle animals on the germfree dam than to feed them by hand and as a rule healthier animals are obtained. The cost differential is considerable especially if the colony is large enough to keep an attendant busy for three or four hours — the length of time he can work comfortably in a sterile garment. The same effort is required to don and sterilize a garment for a short or long work period. Likewise, approximately the same effort is required to sterilize a small as well as a large batch of food or bedding.

In general, continuous operations are more subject to contamination than batch operations. With germfree animals this is not true of those contaminants that may come with the egg or fetus when originally isolated, since few of these isolations are made to establish the colony. Contamination from the environment is accumulative as with all continuous operations. The germfree animal is particularly susceptible to contamination because of the variety of microbic habitats presented by the animal and its environment together with the absence of a competing flora and undeveloped host defenses. While most bacteria and fungi grow readily and can be easily detected a few days after their introduction, some grow poorly and are limited to a few spots. The germfree status becomes more certain as examinations are given over a period of time so adaptation can occur or, the organisms may find a more suitable habitat for detectable multiplication.

Detecting Contaminants

OVER the years a great variety of methods have been used to detect contaminants. At present, routine cultures and microscopic examination of smears are taken at weekly intervals on all germfree units. Occasionally more complete tests are made. Contaminants can be divided into those readily detectable by routine checks and obscure forms. The latter include slow growers and those of very limited distribution. Germfree animal experiments may be classified as short (up to six months) or long term runs. Roughly four times as many contaminations have occurred in the short term runs. Only one obscure contaminant was found among the larger series while six were found among the long term runs. Although there was some difference in the source of contaminations, most of them had a common origin such as punctured gloves or, valve and gasket leaks.

These observations concerning the occurrence of obscure forms indicate that two types of procedures may be used for effective rearing and use of germfree animals. The first termed "alpha operation" involves apparatus and procedures that eliminate observable accidental contamination. Accidents can occur with any equipment or procedure but they can be detected by physical means and the units removed from the series. In practice the units are checked for leaks at the termination of a run. This procedure is essential because while a break in the sterile barrier can be detected rapidly by physical means, the same "expert" examinations over a period of time that were used initially must be repeated to rule out biological contamination. Alpha operation is required to maintain the lines of known purity or the "pedigree" stock as well as long term experiments. The second or "gamma operation" is used for short term experiments. The germfree status is based upon routine examination only rather than the accumulation of information as with the former. The gamma operation is useful in that simpler apparatus and procedures are satisfactory. No leak checks are necessary after a unit is used since a terminal biological examination for contaminants establishes the status of the animals.

Early apparatus containing food and water for the animal

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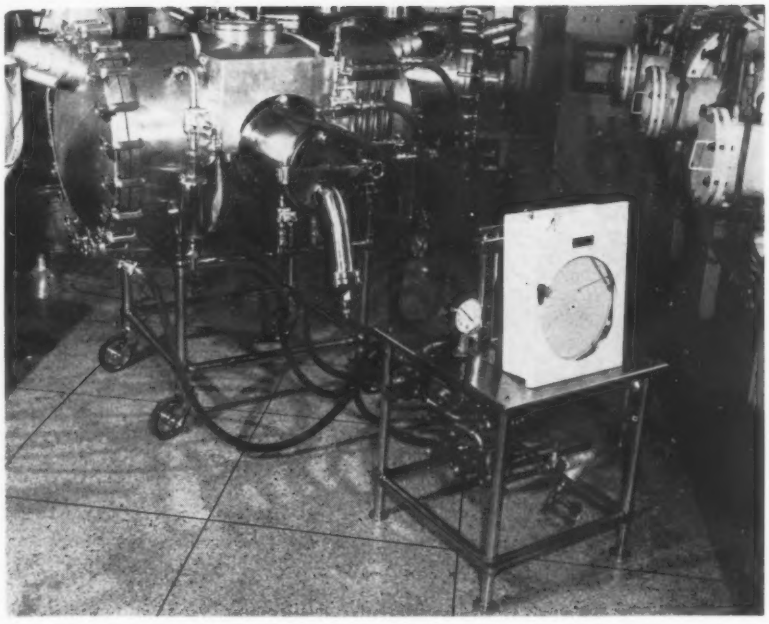


Figure 2. Rearing unit prepared for steam sterilization.

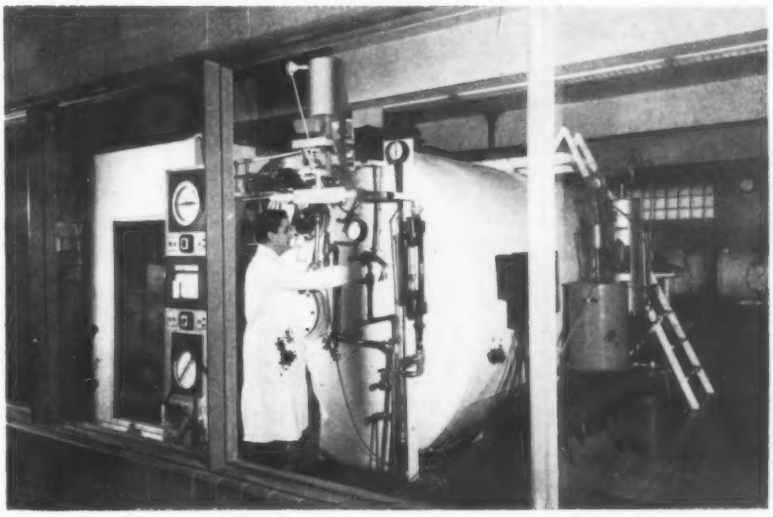
was sterilized either in an autoclave or by germicides. Sterile precautions were taken when introducing the animal. The unit was then sealed for the length of the experiment. This type of procedure has been perfected in the "sealed screen" technique of Royce and Sykes (4) used for sterility testing of pharmaceutical products. The sealed screen unit is a sheet metal box with an acrylic window, attached gloves and inlet and outlet air filters. The samples to be tested are pre-sterilized with ethylene oxide. No materials other than gases are moved in or out of the unit while it is sterile. After flushing out the gas the samples may be tested without the danger of contamination. The first important innovation was made by Küster in 1915 with the introduction of a sterile lock. A double doored autoclave attached to the wall of the unit or, a U-tube liquid germicidal trap passing through the wall, permits the passage of objects in and out of isolation without breaking sterility. At the University of Notre Dame (1), a continuous sterile operation was obtained by attaching two units through their sterile locks. The units themselves were made strong enough to withstand steam under pressure (20 lbs. gauge) in order to simplify their operation. If the units are made of stainless steel with welded seams the additional cost involved in making them strong enough to withstand pressure is not very much and is more than offset by the greater sturdiness and ease of sterilization and testing for leaks.

A rearing room containing a variety of units is shown in Figure 1. In Figure 2, sterilization panel (A) is attached to a rearing unit in order to sterilize the entire set-up before use. Sterilization is accomplished by means of steam under pressure and drying by means of vacuum. A dip tube (B) is used for passing an object through liquid germicide. Eggs and sterile ampules are introduced in this manner. The dip tube can be readily replaced by a solid door while the unit is in use or, the door may be removed completely and the sterile locks joined to effect a passage of material from one unit to another without breaking sterility. Modified units are used for operating upon pregnant dams to obtain starting stock. Other modifications are adapted for experimental procedures or the transportation of animals to other laboratories.

The equipment described above has been developed at Lobund over the years and seems particularly well adapted to long term experiments. Except for the introduction of living organisms, steam under pressure is depended upon for sterilizing exclusively. The sources of accidental contaminations have been located and corrected so reliable operation may be assured. Careful attention must be given to testing the gloves particularly with alpha operation since no usable puncture proof glove has been found.

A view of the germfree animal colony tank (5 and 6) is shown in Figure 3. It is likewise steam

Figure 3. Germfree animal colony tank.



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METHANOL

AMMONIA

FORMALDEHYDE

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HYDROXYLAMMONIUM CHLORIDE

TRIMETHYLAMINE

HYDROXYLAMMONIUM SULFATE

ETHYL ACETATE

DIBUTYL PHTHALATE

NITROMETHANE

BUTYL LACTATE

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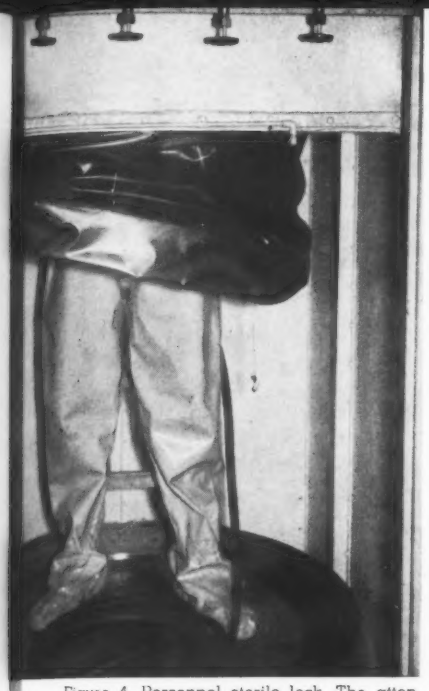

Figure 4. Personnel sterile lock. The attendant is lowering the circular shower curtain in the germicidal mast prior to the application of peracetic acid spray.

sterilized and operates on the same principles as the rearing units except that manipulations are carried out by an attendant in a sealed plastic garment rather than through gloves attached to the walls of the unit. Air is supplied and removed from the garment through separate hoses in order to avoid contamination. To enter the sterile area the attendant is first sealed in the garment and then enters the shower room shown beside the tank. Here the suit is sprayed with a detergent sanitizer primarily for cleaning. The attendant then climbs through a trap door in the floor of the shower into a sterile lock situated beneath the colony tank. The suit and lock are sterilized with a fine spray of two percent peracetic acid (7). This requires ten to fifteen minutes after which the fumes are flushed out and the attendant enters the sterile area through an airtight door in the bottom of the tank.

The first working model of the colony tank has been very successful, remaining sterile for periods of more than one year. Using the suit decontamination system described above, a rat colony was carried for seven months. Better production was obtained than in the smaller rearing units and about one-sixth the time was required for care per animal. Because the suit cannot be checked for leaks with the same degree of certainty as the rearing unit and as yet peracetic acid sterilization cannot be considered as reliable as steam, this operation is placed in the gamma classification. At present the nucleus of the pure strains of animals will be maintained in the rearing units with alpha operation. Periodically all the animals in the colony tank will be used and the unit cleaned and repaired in the interest of preventive maintenance. It will then be supplied with fresh alpha stock.

This is a brief resumé of the isolation technic used for rearing germfree animals at Lobund. Essentially a high degree of isolation is maintained by the use of continuous mechanical barriers in conjunction with a sterilizing medium. In itself this is not new but the high degree of control possible with such a complex manipulative process as the maintenance of animal colonies is a contribution. Undoubtedly some of these technics can be extended to industrial processes, for example the operation of the colony tank has many advantages over the usual "sterile room" in addition to being completely sterile.

Usually steps that require complex manipulations or in which the production rate is not high enough to warrant automatic machines, are carried out in a sterile room. Contamination is reduced stepwise by means of ultra-violet lamps and drafts of sterile air in addition to the sterilization of the different materials and apparatus involved. The workers wear surgical garments which do not provide complete isolation and require the knowledge and practice of aseptic technic. In contrast the method described here is a single step procedure in which the sterile barrier is clearly defined and can be varied in security to meet the needs of the problem. There are few processes that need alpha operation though the complete elimination of contamination may give a premium value to a product (8).

Figures 4 and 5 show a sterile room which operates on the same principles as the colony tank but the security of the mechanical barrier has been reduced. The stainless clad walls of the tank have been replaced by a heavy coating of vinyl paint applied by a spray gun. A variety of films including polyethylene and polyester as well as vinyl, are available for room application. It is difficult to apply and maintain these films without

(*Turn to Page* 155)

Figure 5. Attendant at work in isolation room. Personnel sterile lock to left with the inner door, or lid shown in upper center background.

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Tentative method for determining

Internal Pressure of Aerosols

CSMA Aerosol Division accepts a tentative method for determining the internal pressure of aerosol insecticides and room deodorants

A TENTATIVE method for determining the internal pressure of aerosol insecticides and room deodorants has been accepted by the administrative committee of the Aerosol Division of the Chemical Specialties Manufacturers Association, it was announced late last month. The method, presented by the Insecticide Standard Methods Subcommittee, Scientific Committee, Aerosol Division, was reported on Nov. 15, 1955. It was adopted by the Scientific Committee on Dec. 5, 1955, and accepted by the Aerosol Division, Administrative Committee, May 20, 1956.

The Insecticide Standard Methods Subcommittee is composed of Montford A. Johnsen, chairman; R. V. Sharpless, chairman of the pressure determination task group; J. J. Buchanan, Clarence Clapp, Norman Templin, W. H. Walker and R. A. Fulton, advisor.

The complete text of the method follows:

Introduction

TO conform with certain ICC Regulations, low pressure aerosol formulations of insecticides and room deodorants (20% nonvolatiles, or less) must have internal pressures not greater than 40 psig. at 70° F. Pressure measurements also provide a rapid, though rough, method for checking on filling ratios and filling procedures. Abnormally high pressures may indicate faulty evacuation of cans before pressure filling and the presence of trapped air resulting from below normal propellant temperatures during refrigeration filling.

Many methods of varying degrees of complexity have been devised to determine pressures. All are time consuming and do not lend themselves to mass production. In general, pressures taken to the nearest pound are considered sufficient for most purposes.

Because pressure is a function of temperature, it is very important that the contents of the can reach the standard working temperature of 70° F. A constant temperature water bath with suitable agitation is the best method of meeting this requirement. The samples to be measured require a minimum of 15 minutes in the bath before testing.

The measuring system should be constructed in such a way that the pressure is determined through the dispenser valve and does not require destruction of the dispenser. The system is prepressurized with nitrogen or other suitable gas.

The dispenser may be in either an upright or inverted position during measurement of the pressure. Three shut-off valves are located in the measuring system. One is positioned immediately below the gage. Below this valve is a tee with the opening to the outside controlled by the second valve. This opening is for prepressurizing and for cleaning out the line back to the valve block by sweeping with compressed air or gas. The third valve is in the line preceding the valve block and is also used to prepressurize the system.

Apparatus for pressure method.

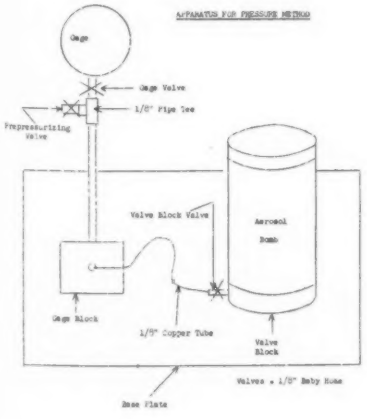
Apparatus

1. A four-inch laboratory test gage, 1-100 psi. range, graduated in one-half pound subdivisions.

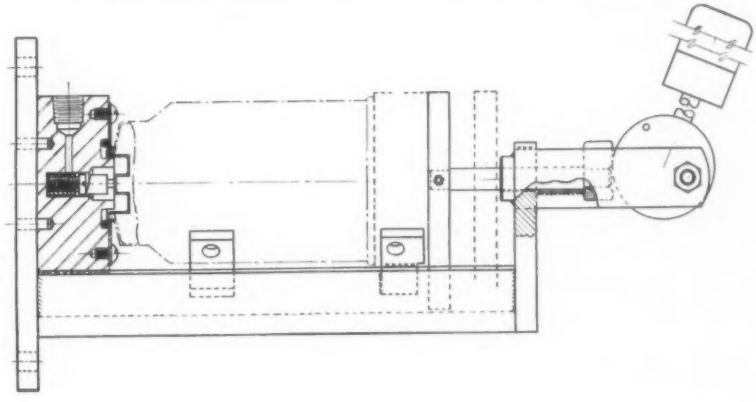
2. A jig with valve block for holding the dispenser and which will activate the valve when clamped into position. The valve block has an "O" ring which effects a seal against the outside of the one-inch valve cup of the dispenser and will accommodate most valves. A special valve block may be required in certain cases. Exchangeable valve depressing pins of various lengths and shapes complete the apparatus. The hook-up between valve block and gage (see attached diagram)

(*Turn to Page* 175)

Apparatus for measurng pressure of aerosols.



Bomb holder for pressure measurement of aerosols. Scale is three quarter.



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Technical BRIEFS

Emulsifiability Test for Carnauba Wax

By C. S. Treacy
Vice-President
M. Argueso & Co.
Mamaroneck, N. Y.

WHILE the manufacture of dry bright emulsions has been carried on successfully for many years and presents no very serious problems when sound formulations and efficient apparatus are employed, the testing of carnauba wax on the small scale for use in these emulsions may be quite tricky. This is especially true when small lots of wax, approximating fifty grams, and resulting in approximately four hundred cubic centimetres of emulsion, are used for test.

The difficulty when using small lots of carnauba wax arises from the extremely rapid loss of heat during the inversion of the water in wax emulsion to the final wax in water type and occurs shortly after the initial addition of the hot water. This phenomenon is not met when the wax to water type of emulsion is produced, as the large amount of heat stored in a relatively great amount of water takes care of the problem very nicely. It is, however, very important when, in the water to wax method, hot water at 95-100°C. is added slowly with rapid stirring to a mass of wax and amine oleic acid soap which totals something in the neighborhood of 60-80 grams.

In the latter case there are several possible factors which cause very rapid loss in temperature, so that a drop from 95° to 85°C. may occur so quickly, if not noticed, that an unsatisfactory emulsion may result. These factors are as follows:

1. Loss of heat from the rapid stirring of a quite small mass of relatively thick wax-soap-mixture.

2. Loss of heat due to poor heat conductivity from the ordinarily steam heated vessel in which the emulsion is made to the increasingly viscous water-in-wax emulsion.

3. Absorption of heat during the transition of the water-in-wax type of emulsion to the wax-in-water type due to a possible endothermic process.

This latter possibility, advanced by A. Cascione, assistant chemist of M. Argüeso & Co., is an interesting one. While it is known that the production of emulsified particles requires energy, no statement concerning the transition of a water in oil emulsion to an oil in water emulsion, being endothermic in character, has been found in the limited literature on emulsions at hand. However, it has been noticed that when adding boiling water to a one-half pound batch of carnauba wax-oleic acid-morpholine or triethanolamine soap, the temperature will begin to drop. On stopping the water addition, the temperature will again remain steady, only to again drop when more boiling water is added. The apparent loss of heat is peculiar and hard to understand, in view of the fact that the containing vessel is steam jacketed. Whether the transition is endothermic or not, a resultant drop in temperature of five to fifteen degrees (depending on batch size) is very troublesome.

The simplest and most obvious answer to all of these problems is the employment of a large sample of wax—say one-half pound. This mass of material loses heat much more slowly. The run may also be made in half of an aluminum double boiler which can be held to temperature by a small bunsen flame. With such equipment and a good stirrer, a run which closely approximates plant conditions can be carried out. If, however, a smaller run is to be made, some method of holding the wax-soap mixture to the necessary temperature must be employed. Even in the factory, in the water-to-wax method, attention to temperature during plant runs, especially during inversion, also means better emulsions.

To sum up the foregoing, it is easier to obtain consistent results when a 200-300 gram sample of wax is used; easier to weigh and transfer the components more accurately; and much easier to control temperatures. A product much more representative of what will be obtained in the factory is obtained from larger size laboratory runs.

★

Microbicidal Wash Powders

Bactericidal and fungicidal properties are imparted to washing powders by the incorporation of at least 0.02 but not more than 0.10 percent of a halogenated 2,2-dihydroxydiphenyl methane or one of its salts. The wash powder contains 10 to 50 percent sodium carbonate. British patent No. 744,433, 1956, H. Wallrath & Dr. J. Ellendorf & Co., Wuppertal, Germany.

Germicides

(*From Page* 151)

a few pinholes. In use, little contamination has been found provided a pressure differential is maintained across the barrier and the barrier is kept dry or tight where growth may occur.

The personnel sterile lock entry is viewed from the entrance way in Figure 4. The worker is about to lower the shower curtain into a circular moat forming the external seal. In Figure 5, the worker has emerged from the personnel lock shown in the back-

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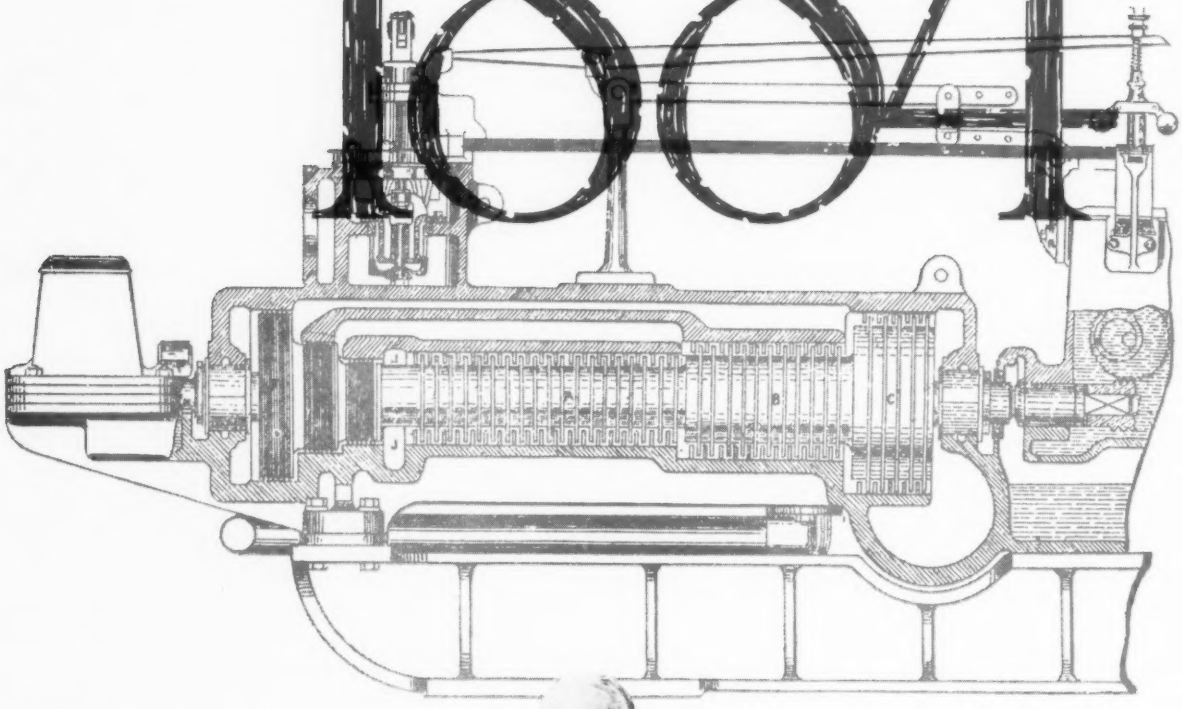

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In the history of fats and waxes

Hübl proposed a method for determining the amount of unsaturation of fatty acids by measuring their iodine absorption. The WIJS method in general use today for determining iodine value is a modification of Hübl's procedure. It is widely used to determine the suitability of a fatty acid for a given application.

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ground and is working in a small dry box.

Use of Germicides

THERE are three ways in which germicides can increase the utility of the sterile room by treatment of 1) the protective garment in the personnel lock, 2) the entire room and apparatus, and 3) lubricating oils and greases. Peracetic acid seems to be almost ideal for use in the personnel lock. Just a short time is required for sterilization in both the gas and liquid phase (7). It can be removed by evaporation and does not leave toxic residues. The one or two percent solution used is not hazardous to handle. The fumes have a pungent odor which gives personnel an adequate warning of its presence. The material is very corrosive. Plastics or stainless steel are the construction materials of choice. This is not a disadvantage in the personnel lock but does limit its usefulness for sterilizing the room and apparatus.

We have used peracetic acid dispersed from stationary spray nozzles and portable spray guns to sterilize the room. It works very well except for its corrosiveness. Because of its reactivity and instability with a variety of substances, it is necessary to check its effectiveness in crevices and porous materials. Both formaldehyde and ethylene oxide can be used in some cases. The agent used to sterilize a room should be a gas in order to clean the air in the room and give good penetration. It should be compatible with the common materials of construction and active against all living agents.

At present, oils and greases are sterilized in the oven and then applied to the sterile working parts. Frequently the entire apparatus is sterilized in the oven before introduction to the sterile area. An effective sporicidal oil and grease would considerably reduce the amount of labor necessary to set up sterile machinery. It seems likely that germicides for the three uses just mentioned in conjunction with improved personnel locks and protective garments will form a unit process for the elimination of contamination. Since the process applies to the room and not the machine, little change in existing equipment seems to be required.

In addition to consideration of sterility, the use of these isolation procedures have other advantages. The comfort of the operator can be increased by conditioning the air supplied to the garment rather than the entire room. Less training is required in sterile technic since the barriers are apparent. Gas composition and humidity in the area can be controlled without danger to personnel. The value of the method can only be determined by more study and use. It is apparent to us that much work needs to be done to make the garment more comfortable and enough uses have to be found to warrant production.

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Brake Fluid Laws

(*From Page* 143)

If the committee acts on this proposal in July it is probable that a number of states will seek legislative action in 1957. Most state legislatures will meet next Spring and we can anticipate considerable legislative activity next year. Since most of the state legislatures meet every other year in the odd numbered years those states which do not act next year will undoubtedly consider the National Committee's brake fluid proposal in 1959.

There is no real conflict between the approach of the National Committee and the CSMA model bill. The most serious defect in the committee proposal is that it is incomplete in some respects. Since, however, it is intended to be a part of the Uniform Motor Vehicle Code in each State and will be enforced in the same manner as other provisions relating to equipment on automobiles we do not anticipate any serious problem. In the preparation of the CSMA model brake fluid bill we have received a number of comments that the bill is too detailed and should be simplified considerably and we have received about an equal number of comments that the bill does not go far enough and should provide for such things a judicial review of the regulations and other details which have not been spelled out in the statute. We believe that the bill represents a compromise between these two opposing approaches to brake fluid legislation.

The advantages of the Uniform Motor Vehicle Code proposal over the California and Georgia type statute are that it does not contemplate approval of each brand of brake fluid prior to sale. Thus there will be no burden on the manufacturer other than to comply with the standards established by the regulatory official. At the same time the enforcement pattern may and probably will differ in the various states depending upon the approach taken by the enforcement official. With this in mind CSMA is preparing uniform regulations to supplement the National Committee's proposal. When the National Committee's proposal is adopted, CSMA plans to work with the National Association of Motor Vehicle Commissioners in the interest of establishing uniform regulations and enforcement.

The CSMA will have for distribution in the near future a compilation of State laws and regulations pertaining to anti-freeze and brake fluids. Supplements will be issued to keep the material

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Table V. Comparison of the vapor pressures and flash points of products containing the same solvent

Sample	Vapor Pressure at 120°C., mm Hg.	Modified Pensky-Martens Flash Point, °F. 100 RPM	300 RPM	500 RPM
N-Nonane	332	94	91	
		91	92	
		90	91	
		90	92	
		90		
Soluble wax (11% in nonane)	332	90	92	
		90	91	
			92	
Floor polish base (11% in nonane)	351	75		
		81	91	92
			95	91
			93	92
			92	
			92	
Nujol (25% in nonane)	313	94	92	
		92	92	
		94		

current and to provide a ready reference of up-to-date information on the State requirements.

This has been a broad and general discussion of the legislative pattern of brake fluid control as it now exists and as it appears to be developing. With some degree of assurance we can predict considerable activity within the next two or three years in this field. We hope that these comments will be of assistance to manufacturers in planning their future program in the brake fluid field. CSMA will keep members posted with each development in this field and will continue its activities with other interested groups toward the goal of sound and uniform legislation, regulation and enforcement.

Wax Flash Point

(*From Page* 136)

Effect of Wax

The results in Table V show that the vapor pressure of the solvent was little affected by the waxes and was actually slightly increased by the wax base. This could be explained by the presence of a trace of water or volatile constituent in the base. As expected, the flash point was not changed by the wax. The presence of 25 percent Nujol in the solvent decreased the vapor pressure as expected. The boiling points of the four samples as determined by extrapolating the vapor pressure curves to 760 mm of Hg are: N-nonane, 149.3°C.; floor wax, 148.6°C.; soluble wax, 148.2°C.; and Nujol in nonane, 152.2°C. From these figures, one would predict (11) that the flash points of the wax products would be about 1°F. lower than that of the solvent and the flash points of the Nujol solution about 2 or 3°F. higher. Either a very accurate method of determining flash points or a statistically large number of determinations by the Pensky-Martens method would be required in order to prove the effect of vapor pressure differences of this magnitude on the flash points.

Conclusion

IT CAN be concluded on the basis of this investigation that the flash point of a wax product should not differ appreciably from that of its solvent. In order to obtain an experimental flash point of a viscous product which is comparable to that of the solvent, localized overheating must be controlled. Efficient stirring and a slow heating rate are essential to the control of local heating. Further, the sample should not be cooled excessively before starting the test because low temperatures increase the viscosity of the product with a resultant increase in susceptibility to local overheating. A method has been developed which eliminates the aforementioned discrepancies in the flash point of solvent type waxes. This method differs from the Pensky-Martens procedure, A.S.T.M. D93, in only three points: The test is started between 70 and 80°F. instead of 30°F. below the expected flash point; the heating rate is maintained at 1.8 ± 0.2°F. instead of 9 to 11°F.; and the mixture is stirred in a clockwise direction (upward thrust) at 300 R.P.M. With these modifications, good correlation is obtained between the flash points of a product and its solvent.

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Insect Resistance

(*From Page* 132)

is required if we are to meet this challenge of the insect world.

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Quick work, Miss Jones—the boss is waiting! Safer work, too, because that gleaming floor wax contains "Ludox" colloidal silica—Du Pont's anti-slip ingredient.

Today, more and more offices, hospitals, schools and churches are specifying floor waxes based on "Ludox." Due to its unique "snubbing" action, "Ludox" reduces skidding and slipping. This action occurs when the pressure of a footstep forces the hard, transparent "Ludox" particles into the softer wax . . . absorbing the foot's forward-moving energy. The result: added traction and safety underfoot.

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For safety underfoot, be sure your floor waxes contain

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News

Fineman to Puritan

Manuel N. Fineman has been appointed technical director of Puritan Chemical Co. of Atlanta and St. Louis, it was announced last month by William H. Frey, secretary-treasurer. For the past nine years Dr. Fineman had been associated with Rohm & Haas Co., Philadelphia. A graduate of McGill University in Montreal, he was awarded his Ph.D. in physical chemistry in 1944. He is active in the Chemical Specialties Manufacturers Association and the American Society for Testing Materials. On the subjects of detergents and foam he has made numerous scientific contributions.

Manuel N. Fineman

In his new position Dr. Fineman will be responsible for the expansion of Puritan's technical research and development program, and the maintenance of standardization and control programs. When making the announcement Mr. Frey said that the firm's first six months' sales valume is approximately 35 percent above last year's comparable period.

★

William Hadfield Retires

William A. Hadfield of Pennsylvania Salt Manufacturing Co., Philadelphia, retired July 31 from a 41-year career in the field of sanitation, in which he played a leading part. Through his early association with General Laboratories, Madison, Wis., originators of the first chlorine sanitizer, "B-K" liquid, Mr. Hadfield pioneered chlorine sanitation on the farm and in dairy plants. When General Laboratories was acquired by Pennsalt he became technical advisor to the latter's "B-K" santitation chemicals staff, and was instrumental in the development of Pennsalt's system of chlorine sanitation.

A graduate of the University of Wisconsin, Mr. Hadfield has been active in the Chemical Specialties Manufacturers Association for many years, is a member and former chairman of the scientific committee of CSMA's Disinfectants and Sanitizers Division. He is a member of the American Public Health Association and the International Association of Milk and Food Sanitatians.

★

New Larvacide Sprays

A new line of sprays and spray concentrates was introduced recently by Larvacide Products, Inc., 117 Liberty Street, New York 6, and 1515 Third Street, San Francisco. The sprays are formulated with pyrethrins and activators and include "L-P" industrial spray (a knockdown oil base spray for general purpose use), "Servacide," designed for hidden insects, and "L-P" mist concentrate for use with mist and fog blowers. Descriptive literature is available from the above addresses.

★

Pesticide Handbook 1956

The eighth edition of "Pesticide Handbook" by Donald E. H. Frear was published last month by College Science Publishers, State College, Pa. The 208 page 1956 edition carries 6111 product listings of commercial pesticides with information on ingredients, manufacturers and uses. A list of tolerances established under the Miller Amendment to the Food, Drug and Cosmetic Act is included. Price of the book, paper bound is $1.25, cloth bound $3.00.

★

Van Winkle in New Post

Atlas Powder Co., Wilmington, Del., recently announced the appointment of Dixon C. Van Winkle to the newly created post of field sales manager for the chemicals division. Mr. Van Winkle, formerly manager of the firm's New York chemicals sales office, will now make his headquarters in Wilmington. With Atlas since 1952, he had been manager of the New York office since 1954. In the latter position he is succeeded by Henry C. S. Swab, previously technical representative in the firm's San Francisco chemical sales office. Edward J. Costello, who had been handling West Coast technical correspondence in the Wilmington general offices, replaces Mr. Swab in San Francisco.

Dixon C. Van Winkle

★

New Franklin Floor Product

A new product designed to remove soap scum from floor and wall surfaces was introduced recently by Franklin Research Co., Philadelphia. "Formula 91" removes soap film only, other stains require different removers. The product may be used on all types of floors, on shower doors, walls, ceramic tile, and on any fabric not harmed by soap and water. It is packaged in pints, gallons, five gallon containers and 55 gallon drums. Details on the product and use directions come on a bulletin

To achieve new and interesting effects in perfume blending...

GIVAUDAN FATTY ALDEHYDES

With these basic aromatic chemicals, powerful in character and versatile in application, Givaudan offers you many interesting opportunities to provide lift...bolster top notes ...round out the character of basic odors...and prolong the lasting effect of perfume blends.

Givaudan's Fatty Aldehydes are produced under rigid control to meet the most exacting demands for odor quality, stability and uniformity. Stable in price and *constantly* available, they are among the great variety of basic aromatics regularly produced or custom-made by Givaudan for its customers.

Our staff will gladly help you select and use those best suited to your requirements.

GIVAUDAN

GIVAUDAN-DELAWANNA, INC.
330 West 42nd Street, New York 36, N. Y.

obtainable from Franklin's technical service division at 5124 Lancaster Avenue, Philadelphia 31.

★

Acme Shellac Expands

A 50 percent increase in production, effective Aug. 1, was announced by Acme Shellac Products Co., Newark, N. J. The firm now has a new refrigerated warehouse capable of holding a million pounds of processed shellac. Other additional facilities include a new raw material warehouse and newly installed bleaching, refining and drying equipment.

★

Anti-Freeze Sales Survey

Sales of anti-freeze products in 1955 amounted to 110 million gallons the first, in what is expected to be an annual, survey of the market conducted by the Chemical Specialties Manufacturers Assn. shows. The CSMA survey, released late last month, reports that 79 million gallons, or 72 percent of the total, were of the ethylene glycol (permanent) type products. The remaining 31 million gallons, or 28 percent, were methanol (volatile) type solutions.

The survey, which reportedly accounts for 97 percent of the anti-freeze production in the U.S., confirmed the trend toward increased sales of these products in sealed package form. Of the ethylene glycol packaged anti-freeze, 18 percent was sold in quart cans; 80 percent was marketed in gallon cans, and two percent sold in 54 gallon drums. Package sales of methanol type anti-freeze were broken down as follows: quart cans, 20 percent; gallon containers, 46 percent, and drums, 34 percent.

The 10 companies providing data for inclusion in the tabulation included: Allied Chemical & Dye Corp.; Celanese Corporation of America; Commercial Solvents Corp.; Dow Chemical Corp.; Jefferson Chemical Co.; National Carbon Co.; Olin Mathieson Chemical Corp.; Spencer Chemical Co.; Wyandotte Chemicals Corp., and Zerone-Zerex section of E. I. du Pont de Nemours & Co.

Moser on Lehn & Fink Bd.

Richard G. Moser has been elected to the board of directors of Lehn & Fink Products Corp., New

Richard G. Moser

York, it was announced last month by Edward Plaut, president and chairman of the board. A tax expert and corporation lawyer, Mr. Moser is a partner of Patterson, Belknap & Webb, New York, general counsel to Lehn & Fink, and also a partner of Moser and Griffin, Summit, N. J.

He is a member of the New York State Bar Association where he serves as chairman of the cosmetic section of the Committee on Food, Drug and Cosmetic Law.

★

Pennsalt Earnings Higher

Pennsylvania Salt Manufacturing Co., Philadelphia, reported for the first six months of 1956 net earnings totalling $2,147,972, equivalent to $1.73 per share on 1,243,000 shares outstanding. This compares with earnings of $1,975,765, or $1.59 per share on 1,242,795 shares outstanding for the comparable period of 1955. Sales for the first half of 1956 totalled $37,118,293, a nine percent increase over the $33,906,591 reported during the first six months of 1955.

Second quarter earnings for 1956 were $1,252,810, a gain of 40 percent over the first quarter of this year. Sales during the second quarter of 1956 were $19,862,226, representing a gain of 15 percent over the first quarter. Earnings per share in the second quarter of 1956 were $1.01, compared with 89 cents in the second quarter of 1955.

★

Carbon Tet. Labels

Because of the increasing number of carbon tetrachloride poisoning cases, the committee on precautionary labeling of the Chemical Specialties Manufacturers Assn. recommends that the following caution appear on labels of carbon tet containing products: POISON DANGER! HAZARDOUS VAPOR AND LIQUID MAY BE FATAL IF INHALED OR SWALLOWED. Use only with adequate ventilation. Do not breathe vapor. Avoid prolonged or repeated contact with the skin. Do not take internally.

Some jurisdictions require the word "Poison" to appear in red on a distinctly contrasting background. Under some state laws antidotes are required when the word "Poison" is used.

★

Bridgeport Reassigns Mills

John H. Mills, formerly director of purchases for Bridgeport Brass Co., Bridgeport, Conn., was recently assigned to head sales of the container division of Hunter Douglas Aluminum Corp., recently acquired by Bridgeport.

Associated with Bridgeport since 1924, he directed introduction of the firm's first pressure packaged insecticides to the public. As manager of the aerosol division he was responsible for some of the company's original aerosol manufacturing business.

With acquisition of Hunter Douglas, Brigeport Brass will soon introduce a new aluminum container for pressure packaging. Bridgeport says that Hunter Douglas has developed a new method of impact extrusion from a cast slug for the manufacture of containers having a flexibility of design and color decoration superior to the current type of metal cans. A program is being developed under Mr. Mill's direction for application of the new container in non-pressure and pressure packaging in various specialty industries.

To achieve new and interesting effects in perfume blending...

GIVAUDAN FATTY ALDEHYDES

With these basic aromatic chemicals, powerful in character and versatile in application, Givaudan offers you many interesting opportunities to provide lift... bolster top notes ... round out the character of basic odors... and prolong the lasting effect of perfume blends.

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Our staff will gladly help you select and use those best suited to your requirements.

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Better Keeping Ability . . . Stability of your product during its shelf-life and use reflects the superior stability of Emersol Stearic Acids. This means that yellowing, development of rancidity, breakdown of emulsions, or any other changes will be negligible. Thus, your products will keep their fresh, just-made appearance and odor throughout their shelf-life and use.

Highest Quality—Uniform Performance... The controlled composition and high quality of Emersol Stearic Acid can make your products the best available in terms of high quality as well as top performance time after time. Such attributes enhance considerably repeat purchases of your products by satisfied customers.

For samples, or the complete story on Emersol Stearic Acids, write Dept. S.

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F. T. C. Cites Aerosol Snow Loader

A complaint charging U. S. Packaging Corp., Bridgeport, Conn., and its officers with alleged false, misleading and deceptive claims of the amount of aerosol snow packaged and dispensed as its product "Frosty Snow" was filed June 29 by the Federal Trade Commission.

The two-count complaint of alleged misrepresentation and slack filling named the corporation and the following officers: Abraham O. Samuels, H. R. Shepherd, Jack Schenberg and Herbert L. Cohen. Mr. Shepherd is no longer an officer of the corporation, having founded his own arosol loading and contract packaging business, Aerosol Techniques, Inc., in Bridgeport, early this year.

The complaint alleges that U. S. Packaging packed 10.5 ounces of their aerosol snow making preparation in a 16-ounce container and allegedly used statements in advertising and on the labels that cans of competitors were smaller. The complaint also alleges that "depictions purported to show the amount of artificial snow" produced by the respondents cans was larger than that of competitive products. The F.T.C. says that thus the respondents allegedly represented directly or by implication that the amount of snow produced from a container is directly related to its size and that because cans of U. S. Packaging were larger than those of competitive products, a substantially greater amount of snow is produced. Such representations, says the F.T.C., are "false, misleading and deceptive." Actually, the F.T.C. points out, the amount of snow that can be produced is dependent upon the amount of material in the container together with its formulation, and not the size of the container.

On the size of the container (16 ounces) allegedly used by the respondents, the F.T.C. declares that it is "of a capacity and size greatly in excess of that required to package 10.5 ounces of material adequately and safely. The complaint further states that "(the) practice of only partially filling (the) container has the capacity of leading members of the purchasing public into the belief that the container actually produces more material than is the fact."

The corporation and its officers are requested by F.T.C. to appear before a hearing in Bridgeport on 10 a.m., Sept. 18, 1956, to show cause why an order should not be entered requiring that the respondents cease and desist from the alleged violations of the law charged in the complaint.

An answer to the complaint may be filed with the Commission within 30 days of its service. The answer should contain a concise statement of the facts constituting the ground of defense and a specific admission, denial or explanation of each fact alleged in the complaint or, if respondents are without knowledge thereof, a statement to that effect.

If the respondents elect not to contest the allegations set forth in the complaint, their answer shall consist of a statement that they admit all material allegations to be true. This constitutes a waiver of hearing as to facts so alleged, and an initial decisions containing "appropriate findings" and conclusions and an order disposing of the proceeding shall be issued by the hearing examiner. In such answer, respondents may, however, reserve the right to appeal under the Commission's Rules of Practice for Adjudicative Proceedings, according to the F.T.C.

A consent order may be negotiated in accordance with the Commission's Rules of Practice.

★

U. S. Packaging Denial

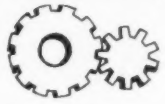
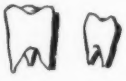
U. S. Packaging Corp., in a statement by Jack Schenberg, vice-president in charge of sales, stated: "We, the officers of U. S. Packaging Corp., vigorously deny any intention to misrepresent in marketing aerosol snow, which was included as a part of the Federal Trade Commission complaint. We will vigorously defend (ourselves) against the F.T.C. complaint at the appropriate time and place. The F.T.C. complaint (consists of) two points: so-called misrepresentation and slack fill, a historical factor (in aerosol snow packaging) vigorously opposed by U. S. Packaging Corp., which we were forced into by competition. When we presented complaints of slack fill by other producers to the Federal Trade Commission, the F.T.C. investigated and reported that there was no cause for action."

★

State Legislation Roundup

Reporting on legislation by various states, the Chemical Specialties Manufacturers Association announced recently that the proposed Louisiana brake fluid bill died in the senate. CSMA counsel has been requested to enter a general protest against amendments and changes to the pending Louisiana pesticide act, House Bill No. 922. The proposal requires dating of packages with date of manufacture of the pesticide, of the technical insecticidal material therein and date of blending. If accepted it would also prohibit the repackaging of pesticides after blending.

The Florida pesticide act stipulates that if a manufacturer discontinues the manufacturing or distribution of a pesticide which has been registered in this state, he will be required to continue registration of this pesticide until no more remains on the retailers' shelves, or not to exceed two years from date of discontinuance. The department of agriculture of Florida has proposed an administrative regulation that when a manufacturer discontinues manufacturing or distributing a pesticide, he must notify the Commissioner of Agriculture of such discontinuance. The date this notice is received by the commissioner will establish the date from which to calculate the two year period during which registration by the manufacturer is re-

WAX can improve virtually every product of  industry—whether it is used in the pantry, or the parlor . . . for beauty or pleasure . . . in the sciences (medicine and  dentistry), and in the arts . . . in the mine, in the factory and in the office. From ship launchings to shoes . . . from electronics to egg preservatives, WAX, properly formulated, offers a host of product improvements and production economies.

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HORN (paints, maintenance and construction materials, industrial coatings) • **WARWICK** (textile and industrial chemicals) • **WARWICK WAX** (refiners of specialty waxes) • **RUTHERFORD** (lithographic equipment) • **SUN SUPPLY** (lithographic supplies) • **GENERAL PRINTING INK** (Sigmund Ullman • Fuchs & Lang • Eagle • American • Kelly • Chemical Color & Supply Inks) • **MORRILL** (news inks) • **ELECTRO-TECHNICAL PRODUCTS** (coatings and plastics) • **PIGMENTS DIVISION** (pigments for paints, plastics, printing inks of all kinds) • **OVERSEAS DIVISION** (export) • **A. C. HORN COMPANY LIMITED** (Canada) • **FUCHS & LANG de MEXICO, S. A. de C. V.** • **GENERAL PRINTING INK CORPORATION OF CANADA, LIMITED.**

quired. An advisory group of Florida pesticide manufacturers and dealers has suggested an additional provision: If, at any time prior to expiration of the two year period no stocks of such pesticides remain on retailers' shelves, manufacturer should so notify the commissioner in writing, and no further registration should be contemplated.

CSMA counsel found no objectionable material included in the proposed regulations for enforcement of the Nevada economic poisons act, with the possible exception of section 13, which deals with changes in labeling and formulation during registration.

★

DeBoskey in New Post

McAleer Manufacturing Co., Detroit manufacturer of automotive and furniture polishes and waxes, recently appointed Joseph A. DeBoskey as president of McAleer Products Division. This is an expansion of the firm's consumers division. Prior to this appointment Mr. DeBoskey had been sales manager.

★

Johnson Ups Sandifer

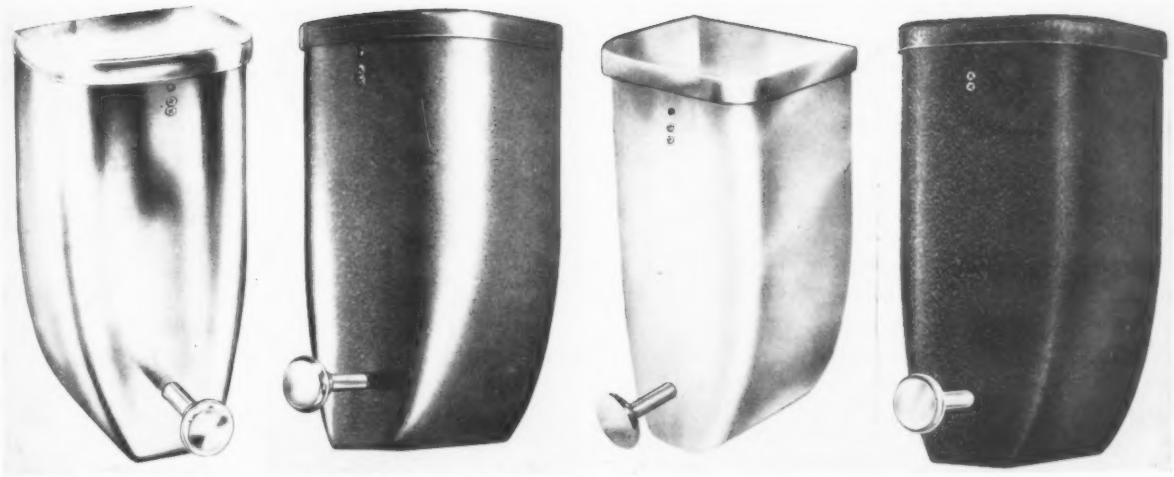
James W. Sandifer was recently advanced to the post of regional director for the Central American and Carribean region of the international division of S. C. Johnson & Son. Inc., Racine, Wis. Since 1955 Mr. Sandifer has served as assistant director of exports and international merchandising.

★

New Dispenser Finishes

Moore Brothers Co., New York, recently announced that its "Powderflo" soap dispenser is now available in four new finishes, including polished chrome, hammertone grey, polished aluminum and wrinkle grey.

All four dispenser models have identical working mechanisms and are designed to dispense any type of powdered hand soap. The "Powderflo" dispensers also feature a recessed base mechanism that is said to prevent clogging from wet



"Powderflo" powdered soap dispensers of Moore Brothers Co., New York, now come in four new finishes: polished chrome, hammertone grey, polished aluminum and wrinkle grey.

hands. Fitted with a shuttle type device which delivers a measured amount of soap, each dispenser holds up to 70 cubic inches of soap.

Other features of the company's dispensers include an agitator that prevents soap from caking, and an invisible mount which enables the dispenser to be installed using only three screws. Complete details on the four new "Powderflo" dispenser finishes may be obtained on request to Moore Brothers Co., 100 Warren St., New York.

CSMA Aerosol Contest

The 1956 aerosol packaging contest, sponsored annually by the Chemical Specialties Manufacturers Assn., will be held during the 43rd annual meeting of CSMA at the Hotel Mayflower, Washington, D. C., Dec. 3-5. Awards to winners in 10 product classifications and a "best of show" will be presented during the meeting, at which all products entered will be displayed.

Entries for the competition must be received at CSMA offices, 50 E. 41st St., New York 17, N. Y., by Oct. 15, 1956. There are no entry fees or other charges to entrants. Entries are open to any aerosol brand owner anywhere and are not restricted to members of CSMA. Only one entry made be made in any one product class, but entries may be made in as many classes as desired. Entry blanks are now available from CSMA. All entries should be sent to CSMA as soon after Sept. 15, 1956 as possible. They are to be made in the name of the brand owner or marketer, and the product entered must be on the market and have been freely offered for sale prior to Sept. 1, 1956.

Only one change in the rules from previous years applies to the 1956 contest: all products eligible for judging must be adequately labeled and in compliance with laws and regulations.

The 10 product classifications include:

Insecticides, repellants and moth proofers; room deodorants; paints, enamels, other protective coatings and paint removers; other household products—polishes, glass cleaners, rug shampoos, water repellants, etc.; shave products; hair preparations; other personal products—shampoos, body deodorants, sun tan oils, drugs, etc.; snow—all types; industrial products—lubricants, stencil inks, belt dressings, etc.; glass and plastic aerosols—all products.

The basis of awards is general sales appeal of the complete package.

Names of judges will be announced shortly, according to Fred Lodes of Precision Valve Corp., Yonkers, N. Y., chairman of the Aerosol Awards Committee. Ira P. MacNair, president of MacNair-Dorland Co., New York, also serves on the committee.

Baird Chemical Moves

Baird Chemical Corp., New York, recently moved to new and expanded quarters at 10 W. 33rd St., New York, it was announced by Joseph M. Baird, president. The firm was formerly located at 254 W. 31st St., New York.

Pressure Packaging

(*From Page* 114)

France's Lanvin Parfumes, the house that reportedly wished Grace Kelly marital happiness with bath size editions of their perfumes. While progress made in aerosol fragrances by U. S. perfume chemists is "just great," he admitted, his firm will have none of the pressurized principle for its Lanvin scents . . . because, he says, the extremely delicate balance of Lanvin's top perfume might be thrown off-key if formulated for aerosol packaging.

* * *

Kudos for Exhibit

KUDOS to General Chemical Division of Allied Chemical & Dye Corp. for the assist they gave the aerosol business through their recent lab scale filling demonstrations at the Merrill Lynch, Pierce, Fenner & Beane exhibit in New York's busy Grand Central Terminal. Thousands of commuters glimpsed the exhibit during a two-week stand . . . thousands of others got a capsule view of aerosols on a nationally televised morning show spot that General garnered as a by-product of the Terminal exhibit.

New West Floor Wax

A new and improved "Super Westwax" was introduced last month by West Disinfecting Co., Long Island City, N. Y. The water emulsion floor wax contains "Mirite" synthetic resin for hard glossy finish without buffing. To impart greater slip resistance the formula incorporates "Ludox" colloidal silica. Good color properties, rapid drying characteristics and economic coverage are claimed for the product. Scratches are removed from the surface by light buffing and it may be maintained by damp mopping without spotting according to the manufacturer. "Super Westwax" is listed by Underwriters' Laboratories, Inc., as an anti-slip floor maintenance material.

★

FTC Cites O'Cedar

A recent Federal Trade Commission complaint charges O'Cedar Corp., Chicago, with having failed to make promotional aid available to all customers on proportionally equal terms as required by the Robinson-Patman Amendment to the Clayton Act. The complaint alleges that O'Cedar has paid money to some customers for demonstrator services or has furnished them with demonstrators. A hearing was to have been held before an FTC examiner in Chicago on July 17.

For Better Insecticide Sales

Put yourself in the CHLORDANE picture

Chlordane is the insecticide that almost sells itself—its wide range use and acceptance represents a real sales potential for you. Whether it's mosquito abatement on 10,000 acres of marsh, ants in a kitchen, lawn that needs treatment for grubs, or turf insect control on the greens and fairways of a golf course, Chlordane fills the need.

Chlordane controls more than 45 different insects. That's why householders, municipalities, greenskeepers, and many other folks turn to Chlordane for dependable insect control. And that's why it's profitable to put yourself in the Chlordane picture.

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REPRESENTATIVES IN PRINCIPAL CITIES

General Offices and Laboratories 330 East Grand Avenue, Dept. SC76, Chicago 11, Illinois

Chemway Sales Up

Chemway Corp., formerly Zonite Products Co., New Brunswick, N. J., recently reported a decline in net sales and an increase in net income and earnings for the first six months of 1956. Net sales of $3,804,103, were down in the first half of this year from $4,013,108 in the first half of 1955. Net income this year was $182,020, as against a net loss of $126,292 a year ago. Share earnings in the first half of this year were 17 cents.

Net sales in the second quarter of 1956 rose to $1,898,098 from $1,872,254 in the second quarter of 1955. Net income in the second quarter of 1955 was reported at $41,296, as against a net loss of $189,829 in the comparable period a year ago. The report stated that a change in inventory accounting increased net income in the 1956 quarter by about $25,000, or two cents a share. Share earnings in the quarter ended June 30, last, were four cents.

★

Signs FTC Decree

The Federal Trade Commission recently approved a stipulation agreement with Carac Corp., Freeport, N. Y., to stop certain claims concerning its insecticides and fertilizers: "Carac" 72 percent chlordane; "Carac Kills-All" insecticide; "Carac" indoor aerosol insecticide; "Carac" 2,4-D weed killer; "Carac" rose and floral garden dust; "Carac" 10 percent PMAS, and "Carac" 40-0-0 nitrogen.

The company has agreed to stop claims that its indoor aerosol insecticide is non-poisonous to humans and pets, unless expressly limited to use as directed; that its garden dust is harmless to plants, and that 10 percent PMAS affords 100 percent control of crabgrass. The company has also agreed to a number of other prohibitions. Edward S. J. Walsh, Carac president, is joining in the stipulation which is for settlement purposes only and does not constitute an admission by the parties that they have violated the law.

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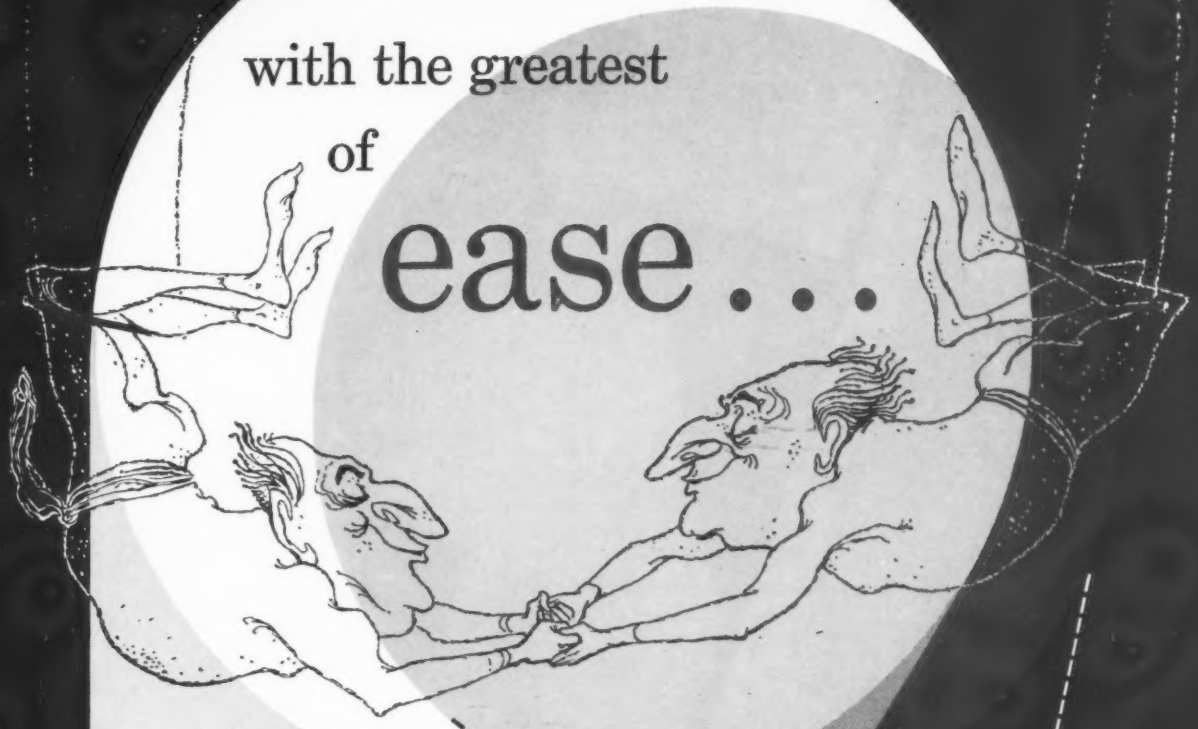

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- Sodium Bicarbonate
- Sodium Metasilicate
- Silicate of soda
- Silicate of potash
- Trisodium phosphate
- Metallic stearates
- Borax
- Boric acid
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- Red oil
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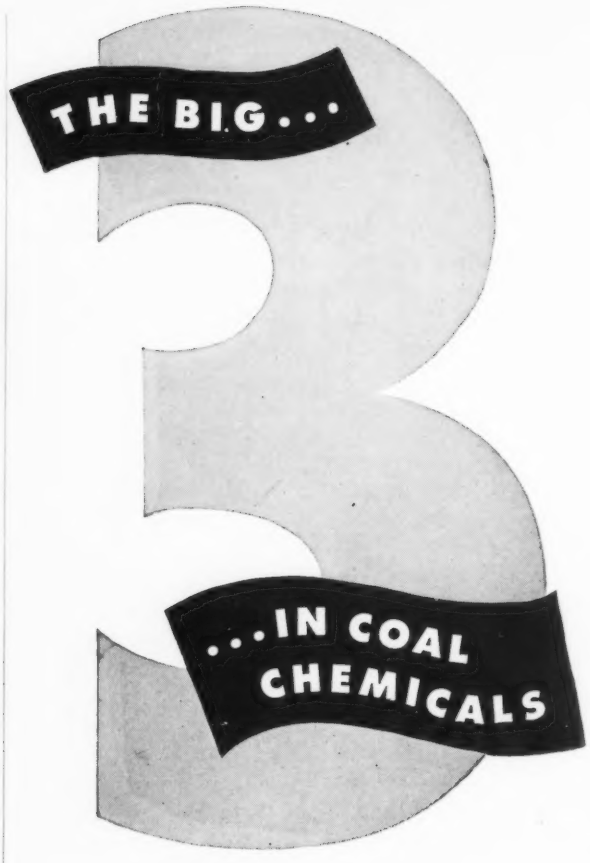

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NACA Lists Sept. 5-7 Meeting Topics

THREE main topics will be featured in discussion sessions held during the 23rd annual meeting of the National Agricultural Chemicals Association, to be held at the Essex & Sussex Hotel, Spring Lake, N. J., Sept. 5-7, it was announced recently by Lea S. Hitchner, executive secretary. Who and what influences growers to buy and use agricultural chemicals; the influence of the new highway program on the use of pesticides, and the latest developments under the Miller pesticide residue amendment are slated for discussion at the meeting.

Dr. Alfred Weed, John Powell & Co. division of Olin Mathieson Chemical Corp., New York, is chairman of the program committee.

In addition, members will hear a presidential address by W. W. Allen of Dow Chemical Co., NACA president; a report on entomological research by E. F. Knipling, chief of the entomological research service of the U. S. Department of Agriculture, and a talk on the "Industry Outlook," by J. V. Vernon, Niagara Chemical Division of Food Machinery & Chemical Corp.

The panel discussing the influences on the grower will have as its moderator, M. R. Budd of Hercules Powder Co., Wilmington. Panel members will include: W. A. Haffert, *New Jersey Farm and Garden;* John McDonald, National Association of Television and Radio Farm Directors; Blanchard Smith, Chipman Chemical Co.; Ellsworth Fisher, University of Wisconsin entomologist; and a leading pesticide dealer.

Jack Dressen, NACA herbicide specialist, will be moderator for the panel studying the highway program. Members of the panel will include: C. O. Eddy, Niagara Chemical Division of FMC, and chairman of the American Road Builders Association's subcommittee on chemicals for roadside maintenance; and R. J. McMahon, McMahon Brothers, Binghamton, N. Y., commercial spray applicators firm.

The Miller amendment will be discussed by the following panel members: Winton B. Rankin, Food and Drug Administration; John Coyne, pesticide regulation section, plant pest control branch, Agricultural Research Service, U. S. D. A.; George C. Decker, section of economic entomology, State Natural History Survey Division, Urbana, Ill.; and J. A. Noone, NACA technical director.

Election of officers for 1956-57, and three new members of the board of directors will also take place at the meeting.

★

Can. Ag. Chem. Program

The fourth annual meeting and conference of the Canadian Agricultural Chemicals Association will be held at the Sheraton Brock Hotel, Niagara Falls, Ont., Oct. 16-18. The program will feature a panel discussion dealing with agricultural extension. Under the chairmanship of A. H. Carter, Sherwin-Williams Co. of Canada, Ltd., the panel will include speakers representing industry, education, and federal and provincial departments of agriculture. Keith Jackson of Monsanto (Canada), Ltd., will present a paper on the future markets and growth of agricultural chemicals in Canada. Opportunities for general growth in Canada's economy will be studied by R. R. Campbell, vice-president of J. Walter Thompson Company, Toronto.

Hubert Martin, Science Service Laboratory, Department of Agriculture, London, Ont., will present a paper on the long term evaluation of the place of insecticides in crop protection. Arrangements are being made for farmers and growers to present papers dealing with the consumer's aspect.

G. H. Wood, president of G. H. Wood & Co., Toronto sanitary supply firm, will give an address entitled "Ideas in Sales"; and H. M. McLuhan of the University of Toronto will speak on his research in the packaging field.

A banquet, golf tournament, visits to the Niagara Park Commission Gardening School and the new hydroelectric installations, and a plant tour at North American Cynamid Co. are among other features on the program. The Association's address is 266 St. James Street, West, Suite 402, Montreal.

★

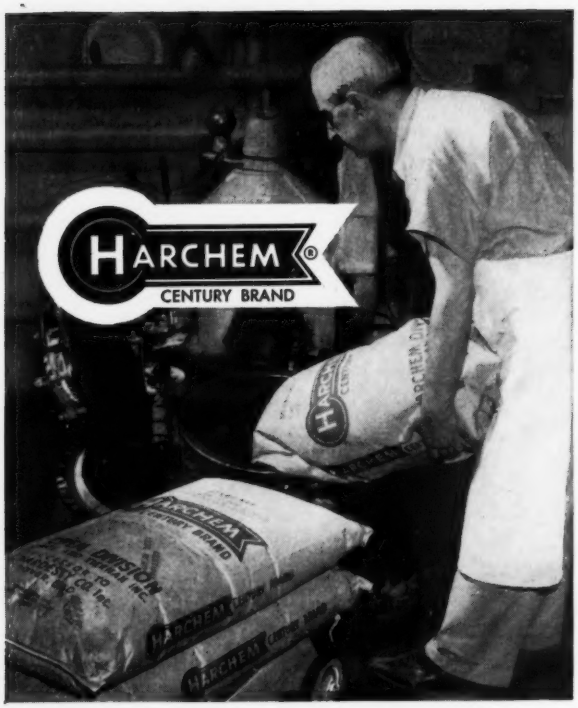
NPCA Meets Oct. 22-25

Half day sessions on pest control problems, including insect resistance, rodent control and related subjects will highlight the 23rd annual meeting of the National Pest Control Association. The meeting will be held Oct. 22-25 at the Sheraton-Cadillac Hotel, Detroit. National program chairman is Joseph J. Mooney of Columbus Pest Control Co., Columbus, O.

The theme of the 1956 annual convention is "Public Health in Pest Control," according to Ralph E. Heal, executive secretary.

In addition to a half day technical session on rodent control, discussion leader for which will be Walter W. Dykstra of the Fish and Wildlife Service of the U. S. Department of the Interior, another will cover insect control with special attention to resistance of insects to insecticides. There will also be a report of the association's research project at Ohio State University. Business problems, including pricing, cost and sales, will be discussed in other sessions. Randall Latta of the U. S. Department of Agriculture will speak on fumigants. Other Department of Agriculture scientists, including Carroll Smith and Cliff Lofgren, will be heard on various aspects of pest control, including termites. Audio-visual aids in training will be covered as well.

The social side of the meeting will include a trip to Greenfield Village in nearby Dearborn, while the banquet is scheduled to be held the evening of Thursday, Oct. 25.



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Natl. Labs. Expands

The opening of a West Coast branch and several changes and advancements in personnel were announced recently by L. C. Van Nest, president of National Laboratories, Inc., Toledo. At the same time it was announced that production facilities have been installed at the Toledo plant to handle an anticipated $1,000,000 additional yearly volume of business expected from West Coast operations. National has now expanded its sales organization to include 350 distributive outlets, and 90 sales representatives working out of five regional offices throughout 38 states east of the Rockies.

R. H. Meadows

C. L. Earp

Named general sales manager is R. H. Meadows, who previously was the company's regional sales manager in the Chicago office. Mr. Meadows has been with the company 10 years. He will be responsible for the overall direction of the company's sales activities.

P. C. Scott, formerly general sales manager, is moving to California, where he will be in charge of all activities connected with the West Coast operation, which has headquarters in San Francisco. Also transferring to California is I. A. Claus, formerly assistant to the general sales manager, who will work with Mr. Scott.

The new divisional sales manager is C. L. Earp, who has been with the firm over 17 years in various executive capacities. His most recent post was as regional sales manager in the Atlantic office. He is now directly in charge of the company's 90 divisional managers.

J. R. Baldwin, former director of field personnel, has been advanced to the newly created position of district sales manager, with complete responsibility for supervising the activities of all district managers. W. E. Spengler has been elevated to the position of director of field personnel, in charge of all field employment.

★

A. D. Penick Heads NYQ

Albert D. Penick has been elected president of New York Quinine & Chemical Works, Inc., Brooklyn, it was announced last month. Mr. Penick's former post as first vice-president of NYQ is taken over by Barclay E. Mackinnon, who had previously held the title of vice-president.

Mr. Penick went with S. B. Penick & Co., New York, parent company of NYQ, immediately after his graduation from the University of Virginia in 1930. He held various executive positions, was elected first vice-president of NYQ in 1954, and is executive vice-president of S. B. Penick & Co. The new head of NYQ is the brother of S. B. Penick, chairman of the parent company.

Associated with NYQ since 1933 Mr. Mackinnon became assistant secretary in 1948.

Picco Cleveland Office

Pennsylvania Industrial Chemical Corp., Clairton, Pa., recently announced the opening of a sales residency in Cleveland. Gardner L. Brown has been placed in charge of the office and will cover the northern Ohio area.

Gardner L. Brown

Prior to this appointment Mr. Brown served as technical liaison with the rubber reclaiming industry, a responsibility which he will retain. He joined the firm in 1953.

★

New Shanco Wax Base

A new emulsifiable resin-wax base designed for use in bright drying emulsion waxes was announced recently by Shanco Plastics & Chemicals, Inc., Tonawanda, N. Y. Designated "Shanco Rax-22," the new wax base is a combination of a pale and uniform oxidized microcrystalline wax and "Shanco 300" resin. "Shanco Rax-22" is pale in color and the oxidized microcrystalline wax mixed with it is said to be protected against loss of color on reheating to temperatures required for emulsification.

The physical properties of "Shanco Rax-22" include:

Softening point (ASTM R & B)	190-195
Acid number	40-45
Saponification number	50-70
Penetration (ASTM)	1-3

A booklet describing the new Shanco wax base and suggested formulations incorporating

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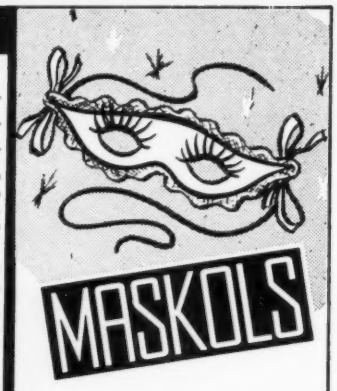

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"Rax-22" are also given. Copies of the booklet, which also lists other Shanco products, as well as addresses and names of Shanco representatives in the United States and Canada, is available by writing the company at Two Mile Creek Road, Tonawanda, N. Y., or contacting representatives in Baltimore, Boston, New York, Philadelphia, St. Louis, and Montreal and Toronto, Canada.

Shanco also announced at the same time the availability of a catalog on its complete line of resins and related materials for use in floor finishes. Included is technical data on wax compatible resins, alkali soluble resins, formulation information, material sources on products mentioned but not made by Shanco and its representatives in the U. S. and Canada.

—★—

Germicidal Polishing Cloth

Impregnation of polishing cloths with aqueous polysiloxane emulsions in the presence of water soluble bactericidal agents is described in a recent German patent. As an alternative, a cloth previously treated with a bactericide can afterwards be impregnated with a silicone oil emulsion. In addition to imparting high gloss to polished or smooth surfaces, such a cloth destroys bacteria picked up in the wiping operation. The power of adhesion exhibited by bacteria has been found smaller on silicone treated surfaces than on others. It should therefore be easy to remove micro-organisms by wiping with the bactericidal silicone treated cloth and to kill them in the cloth.

In beauty parlors, on smooth surface counters, in hospitals, and in other locations where removal and elimination of micro-organisms is important, the use of such polishing cloths may be considered.

As water soluble bactericides for impregnation of such cloths the author suggests phenolates, chlorinated phenolates and their homologues, quaternary ammonium compounds, amines and amino acids. German patent 941,309.

New "Cling-Surface" spray belt dressing in a pressurized container was announced recently by Cling-Surface Co., 1044 Niagara St., Buffalo, N. Y. Through improvements in aerosol packaging, Cling-Surface has been able to increase volume of belt dressing with corresponding reduction of propellant. Quality of the product has not been sacrificed to obtain proper spray pattern, according to Gordon N. Parker, president of Cling-Surface Co.

Hugo Arens, Essen, to Th. Goldschmidt A. G. Essen. *Seifen-Oele-Fette-Wachse*, No. 9, 1956, p. 250.

—★—

Insect Repellent Bases

Retention of sodium iodide, methyl iodide, and dimethyl phthalate on the skin in various ointment bases was studied by radioactive tracer techniques. Studies were carried out under three different sets of experimental conditions: normal, exposure to a fine spray of water, and conditions of sensible perspiration. Under normal conditions an oil/water base gave better retention for sodium iodide and methyl iodide than a water/oil base. The reverse held true when the bases were subjected to fine water sprayings. Under conditions of perspiration, sodium iodide was retained well in water/oil base but methyl iodide was retained better in the oil/water base. A water/oil emulsion containing 40 percent dimethyl phthalate provided better retention under all conditions.

On the basis of the data obtained an improved cream dimethyl phthalate containing 15 percent acetostearin was evaluated and found superior to seven other bases. Paul W. Gerding, Glen J. Sperandio, and John E. Christian, Purdue Univ., *J. Am. Pharm. Assoc.* 44, 574-7, 1955.

Prentiss Moves in N. Y. C.

Prentiss Drug & Chemical Co., on Aug. 1, moved its main office to 101 W. 31st Street, New York 1, N. Y. The firm, previously for many years, had been located at 110 William Street. The new telephone number is PEnnsylvania 6-6766.

Aerosol Test

(*From Page* 153)

is as follows: ⅛" Hoke valve, ⅛" diameter tubing, gage block, ⅛" pipe of sufficient length to allow the gage to be positioned above the surface of the water bath, ⅛" tee, ⅛" Hoke valve and gage. Reducers and connectors for pipe and tubing are used where necessary. The exhaust end of the tee is controlled by another ⅛" Hoke valve. The internal volume of the ⅛" pipe is reduced by inserting a ¼" brass rod. All plumbing should be brass and copper.

3. Constant temperature water bath equipped with stirring apparatus and of sufficient size to hold jig and test dispensers. Bath should be deep enough to allow the dispensers to be entirely surrounded with at least one inch of water. This will require a screen or perforated shelf above the floor of the bath. The bath should be 70° + 0.5°F. At 70°F. a 1°F. increase in bath temperature raises the pressure of the Official Test Aerosol (OTA) approximately 0.8 psig.

Procedure

1. Fifteen minutes before testing, place dispensers to be measured in 70°F. water bath along with measuring jig which has been prepressurized to 30 psig. and in which a spare dispenser has been clamped. The valve in the valve block is opened so that pressure in the dispenser is being measured. Use of spare dispenser prevents inaccuracies with the first test can, and keeps water out of the jig. Shake cans occasionally to help bring the contents more quickly to the bath temperature.

2. After 15 minutes, remove jig from bath and close valve in the valve block to keep system under pressure. Remove spare container and crack valve block valve just enough to reduce gage reading to the proper starting pressure (30 psig.). Wipe out any liquid that comes out of the valve block during this operation. Quickly remove first can to be tested from the bath with a pair of tongs and wipe off excess water before placing in jig.

3. After can has been clamped in position, open valve block valve, tap gage lightly, and record gage reading. Close valve block valve and repeat operation for the next can. Replace jig in bath every five minutes.

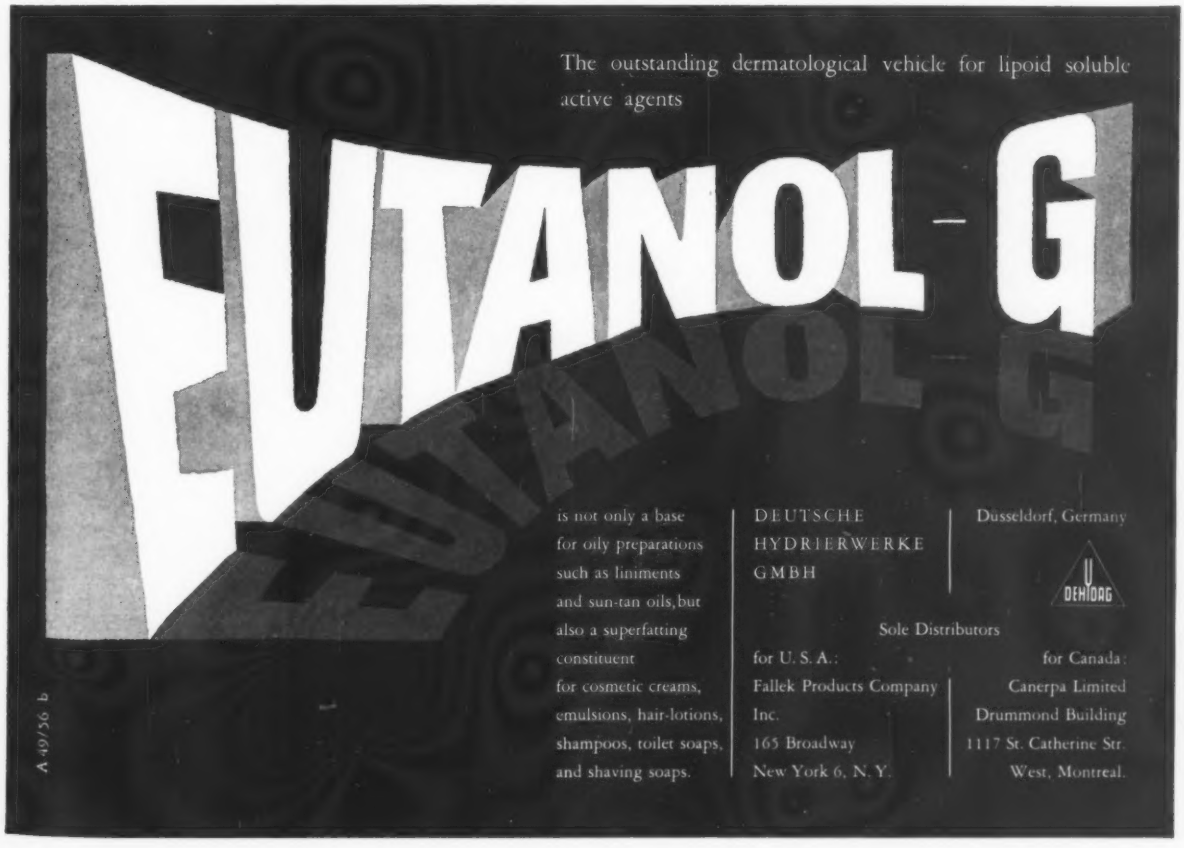
4. Lines should be blown out periodically. The frequency of cleaning will be governed by the type of formulas encountered, and must be determined by experience. Operation is accomplished by back pressuring through the prepressurizing valve after first isolating the gage by closing the gage valve.

Discussion

It is suggested that a standard consisting of an accurately-filled dispenser having a similar container and valve as the test samples be used to check the proper functioning of the measuring system. The OTA dispenser would serve satisfactorily to check concave style cans. The standard should be used to start off a series of measurements and be used at regular intervals throughout the series.

The process of prepressurizing should be done in such a way that the nitrogen will purge out the air in the system. If the nitrogen cylinder does not have a regulator, great caution must be exercised to prevent damage to the gage. A vacuum pump may also be used to draw air from the system. Here again care must be taken to prevent bending the pointer and throwing the gage out of calibration. The use of a compound gage is the best solution.

Prepressurizing may be accomplished most conveniently and without chance of injuring the gage by using a dispenser filled with the propellant gases alone in the same proportions as the product being tested.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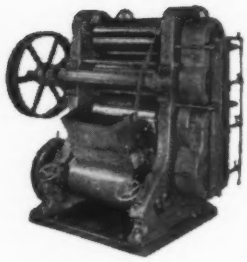

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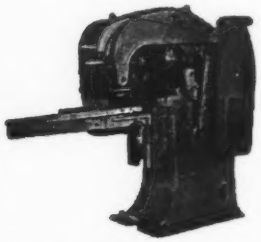

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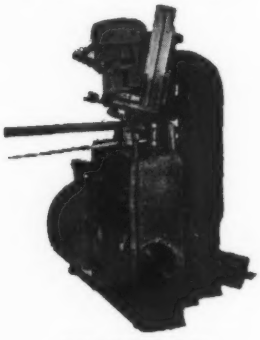

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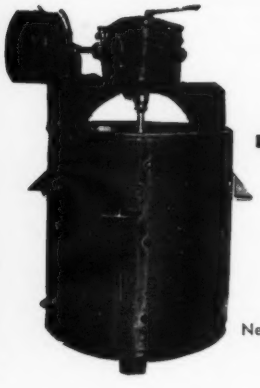

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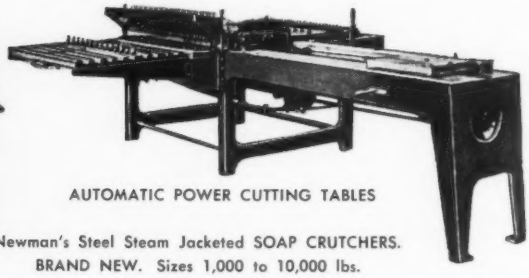

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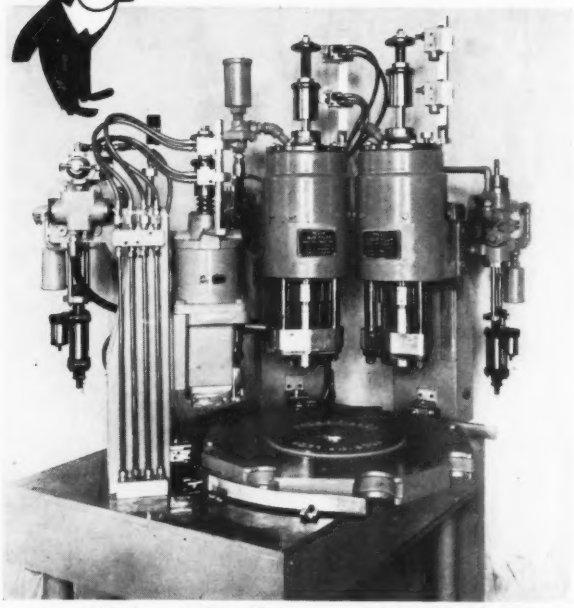

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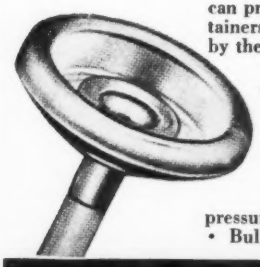

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New Trade Marks

(*From Page* 109)

Anco—This for scale removers, condenser, ice machine and air wash cleaners. Filed Mar. 11, 1955 by Anderson Chemical Co., Macon, Ga. Claims use since June 1946.

chiffon—This for liquid detergent. Filed July 14, 1955 by Armour & Co., Chicago. Claims use since May 3, 1955.

Lano-cel—This for abrasive-free hand cleaner. Filed Aug. 8, 1955 by United Research and Development Associates, Inc., Newark, N. J. Claims use since Oct. 14, 1953.

Questex—This for syndet and soap additive. Filed Aug. 25, 1955 by Victor Chemical Works, Chicago. Claims use since Feb. 17, 1955.

Tremstrip—This for paint and varnish remover. Filed Sept. 29, 1955 by Tremco Mfg. Co., Cleveland. Claims use since Apr. 15, 1955.

Oven-Sprite — This for oven cleaner. Filed Oct. 3, 1955 by Fenco Corp., San Francisco. Claims use since Sept. 10, 1955.

nomel—This for liquid detergent for dishes, clothes and other general cleaning purposes. Filed Oct. 17, 1955 by John E. Larkin, doing business as Quality Products, Co., Westerly, R. I. Claims use since Aug. 1, 1955.

Glass-Glow—This for glass cleaner in liquid form. Filed Oct. 24, 1955 by Boyer Chemical Co., Chicago. Claims use since July 1, 1934.

Scamper—This for liquid detergent for general household use. Filed Oct. 24, 1955 by Safeway Stores, Inc., Oakland, Calif. Claims use since July 19, 1955.

Nu-Hair—This for hair shampoo. Filed Oct. 25, 1955 by Oscar Willen, doing business as Nu-Hair Laboratories, Philadelphia. Claims use since during the first week of Jan. 1954.

Oleen—This for lather oil shampoo, cream shampoo, and cocoanut oil shampoo. Filed Dec. 12, 1955 by Curley Co., Philadelphia. Claims use since Aug. 1, 1937.

Super Visex—This for cleaner and protective coating polish for exterior windows and plate glass. Filed Dec. 7, 1955 by Dan Cu Co., Oklahoma City, Okla. Claims use since Sept. 2, 1955.

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Gulf—This for anti-freeze solution. Filed May 16, 1955 by Gulf Oil Corp., Pittsburgh. Claims use since Aug. 9, 1939.

Hutto's dip—This for metal, silver and jewelry cleaner. Filed June 1, 1954 by Harvey Co., Houston. Claims use since Jan. 4, 1954.

★

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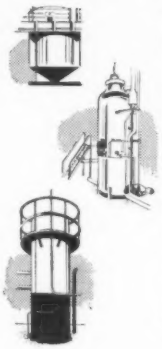

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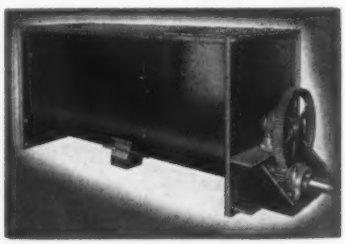

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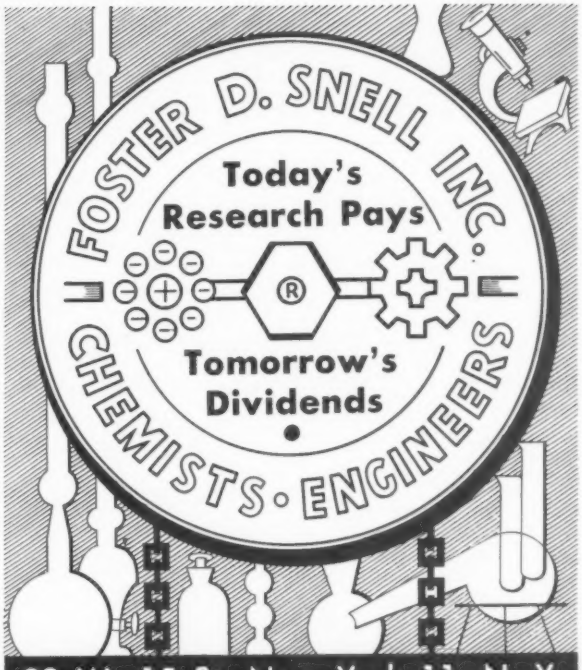

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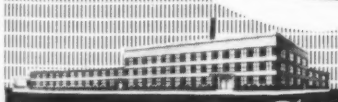

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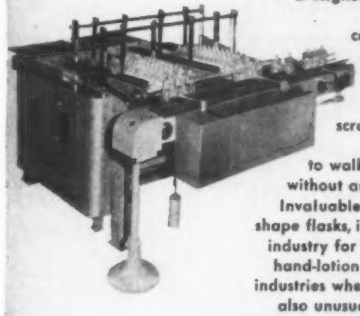

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Coming Meetings

American Chemical Society, 130th national meeting, Atlantic City, N. J., Sept. 16-21; division of marketing & economics, symposium on cosmetics, Sept. 20.

American Oil Chemists' Society, 47th annual fall meeting, Chicago, Sept. 24-26.

American Public Health Association, 84th annual meeting, Convention Hall, Atlantic City, Nov. 12-16.

American Society for Testing Materials, Committee D-21 on Wax Polishes and Related Materials, Washington, D. C., Dec. 10.

Association of American Soap & Glycerine Producers, 30th annual meeting, Waldorf-Astoria Hotel, New York, Jan. 23-25.

Canadian Agricultural Chemicals Association, 4th annual meeting, Sheraton Brock Hotel, Niagara Falls, Ont., Oct. 16-18.

Chemical Specialties Manufacturers Association, 43rd annual meeting, Mayflower Hotel, Washington, D. C., Dec. 3-5.

Entomological Society of America, annual meeting, Dec. 27-31, 1956, Hotel New Yorker, New York City.

International Sanitation Maintenance Show and Conference, New York Coliseum, Oct. 14-16.

National Agricultural Chemicals Association, 23rd annual meeting, Spring Lake, N. J., Sept. 5-7.

National Association of Retail Grocers, Los Angeles, June 10-14, 1957.

National Motel Show, 3rd annual convention, at Morrison Hotel, Chicago, Oct. 21-27.

National Hotel Exposition, 41st annual show, Coliseum, New York City, Nov. 12-16.

National Packaging Exposition and Conference, International Amphitheatre, Chicago, April 8-11, 1957.

National Sanitary Supply Association, first western regional trade show and convention, Ambassador Hotel, Los Angeles, Nov. 25-27; regional meetings, eastern, Park Sheraton Hotel, New York, Oct. 11-12; Ohio, Hollenden Hotel, Cleveland, Sept. 19; southwestern, Hilton Statler Hotel, Dallas, Sept. 7-8; national trade show and convention, Conrad Hilton Hotel, Chicago, March 31, Apr. 1-3, 1957.

Packaging Machinery & Materials Exposition, Public Auditorium, Cleveland, Sept. 11-14.

Society of Cosmetic Chemists, 3rd seminar, Barbizon Plaza Hotel and N. Y. Academy of Science, New York, Oct. 4-5.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meetings, Roosevelt Hotel, New York, Sept. 11, Oct. 9, Nov. 7; annual meeting and dinner, Biltmore Hotel, New York, Dec. 3.

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Tale Ends

ONCE in a while they would get a complaint that their deodorizing para blocks lasted an unusually long time, but had little if any scent or deodorizing effect. This happened occasionally to Industrial Soap Co., St. Louis, according to Bob Shapiro, v.p. At first, they were puzzled, but after investigating the situation, they made up stickers to accompany each shipment of blocks which read: "Please remove cellophane wrapper before using."

* * * * *

What's this we hear about some people trying to get around the Spitzer Aerosol Foam Patent by using a straight hydrocarbon propellant, possibly propane? Whether this would circumvent the patent, we don't know. We just heard about it.

* * * * *

Bayard Johnson of Franklin Research, Philadelphia, recent recipient of a watch from the company for 20 years service, broke a small bone in his ankle last month while running for a train at his local commuting station. Now, hobbling around his office, he wants to go on record against anybody anywhere anytime running for trains. The prez of the famous mythical Spurious Products Co. says only dopes run after trains.

* * * * *

Termites are eating the heart out of the Voice of America on Okinawa. Cost to stop the depredations. — $270,000. Uncle Sam, as usual, will pick up the tab via a Congressional appropriation. Now, we figure at this price that it would be cheaper to immerse the whole island in pentachlorophenol, orthodichlorobenzene, or something, and just let it drain off.

* * * * *

These 25 year men in and around the soap business are getting as numerous as fleas on a hound. Latest additions to our list are John Nykiel, sales manager of the Industrial Division of Colgate-Palmolive, and Ted Frascenella who has been with the Soap Association since 1931. Neither one of them looks old enough to have worked for anybody for 25 years. Both must have started working at about age 12. Well, boys' here's to another 25 years!

* * * * *

Morrie Moss, head of the Moss Soap Co. which is located just in the shadow of the famous race track at Hialeah, Florida, tells us that his new location is at times embarrassing. Because his friends send him kidding mail about horse bets, Morrie thinks the post office is getting suspicious that he runs a book and not a soap business. So, if you want to put a bet on some nag's nose, don't write Morrie. They're not running at Hialeah anyway.

* * * * *

Looks like a $100,000 publicity campaign may be close to gelling in the Chemical Specialties Mfrs. Assn. Half would be for aerosol consumer publicity and the other half for moth control on a two-year deal. The campaign would be set up within the CSMA organization. Fred Lodes of Precision Valve is chairman of the aerosol committee and Don Templeton of Stanley Home Products is chairman of the moth control committee.

* * * * *

The hot bath with soap and water should be taboo, according to Dr. S. C. Dyke, noted British pathologist writing in a recent issue of the "British Medical Journal." He says that washing with soap and water removes the greasy sebum which is our skin's protection and lays our skin open to the danger of infection. Maurice Schofield wrote a humorous piece in the July issue of "Soap, Perfumery & Cosmetics" about the good doctor's stern warning against bathing. We got quite a kick out of it.

John Conner, general counsel for the Chemical Specialties Manufacturers Assn., is a man of few words. Recently at a CSMA board meeting, it was announced that he had become a member of a larger and more influential law firm in Washington. Midst the congratulations, he was called upon for a speech,—and he answered thus: "It has always been a cardinal principle with me that before I make a speech that I should have something to say. Thank you!"

* * * * *

Old Dutch Cleanser has joined the color parade. The famous old scouring powder which made its first appearance on the market way back in 1905 is now "New Blue Dutch Cleanser." The product was bought by Purex Corp., Ltd. from out California way in May, 1955, and the new owners sure have jazzed up the sales of the old product. What with new snappy label and fancy displays, plus more television and other advertising, Old Dutch is going to town saleswise. Starting in September, Purex will again sponsor the $100,000 jackpot program, "The Big Surprise."

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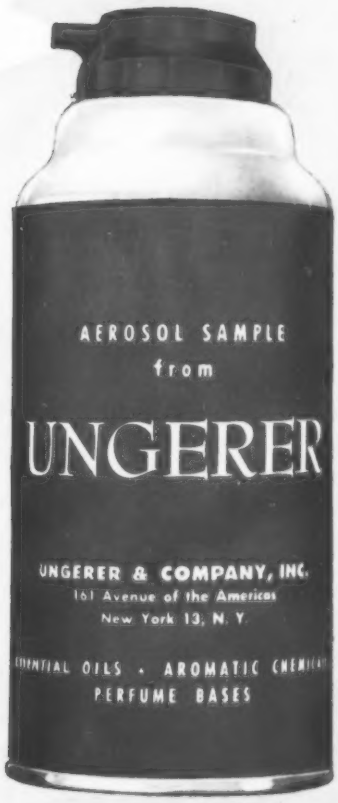

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